

SONY[®]

SDI MULTI DECODER ADAPTOR

BKM-21D

MAINTENANCE MANUAL
2nd Edition
Serial No. 2100001 and Higher

⚠️ 警告

このマニュアルは、サービス専用です。

お客様が、このマニュアルに記載された設置や保守、点検、修理などを行うと感電や火災、人身事故につながることがあります。

危険をさけるため、サービストレーニングを受けた技術者のみご使用ください。

⚠️ WARNING

This manual is intended for qualified service personnel only.

To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠️ WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.

Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlag, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠️ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l'entretien. Afin de réduire les risques de décharge électrique, d'incendie ou de blessure n'effectuer que les réparations indiquées dans le mode d'emploi à moins d'être qualifié pour en effectuer d'autres. Pour toute réparation faire appel à une personne compétente uniquement.

WARNING!!

AN INSULATED TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.

THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY A ⚠️ MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION!!

AFIN D'ÉVITER TOUT RISQUE D'ÉLECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ÊTRE UTILISÉ LORS DE TOUT DÉPANNAGE.

LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠️ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÈCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDICUIT DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

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Section 1
Operating Instructions

Extracted from the
operating instructions

SONY®
SDI Multi Decoder Adaptor
BKM-21D

INSTALLATION MANUAL Japanese/English
1st Edition (Revised 5)
Serial No. 2100001 and Higher (BKM-21D)

For customers in the USA

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the customers in Europe

This product with the CE marking complies with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European standards:

- EN60950: Product Safety
- EN55103-1: Electromagnetic Interference (Emission)
- EN55103-2: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environment(s):

E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors) and E4 (controlled EMC environment, ex. TV studio).

Pour les clients européens

Ce produit portant la marque CE est conforme à la fois à la Directive sur la compatibilité électromagnétique (EMC) (89/336/CEE) et à la Directive sur les basses tensions (73/23/CEE) émises par la Commission de la Communauté européenne.

La conformité à ces directives implique la conformité aux normes européennes suivantes:

- EN60950: Sécurité des produits
- EN55103-1: Interférences électromagnétiques (émission)
- EN55103-2: Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans les environnements électromagnétiques suivants:

E1 (résidentiel), E2 (commercial et industrie légère), E3 (urbain extérieur) et E4 (environnement EMC contrôlé ex. studio de télévision).

Für Kunden in Europa

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt sowohl die EMV-Direktive (89/336/EEC) als auch die Direktive Niederspannung (73/23/EEC) der EG-Kommission. Die Erfüllung dieser Direktiven bedeutet Konformität für die folgenden Europäischen Normen:

- EN60950: Produktsicherheit
- EN55103-1: Elektromagnetische Interferenz (Emission)
- EN55103-2: Elektromagnetische Empfindlichkeit (Immunität)

Dieses Produkt ist für den Einsatz unter folgenden elektromagnetischen Bedingungen ausgelegt:

E1 (Wohnbereich), E2 (kommerzieller und in beschränktem maße industrieller Bereich), E3 (Stadtbereich im Freien) und E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

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BKM-21D SDI Multi Decoder Adaptor

The BKM-21D SDI Multi Decoder Adaptor is a video signal input adaptor for BVM-Series video monitors. When installed in an input option slot on the rear panel of the video monitor, it provides video input and output connectors for the monitor and a decoder for serial digital signals and analog composite (NTSC/PAL) signals.

Notes

- Before installing this adaptor, check the adaptor serial number and the software version of your video monitor. If the adaptor serial number is 2100001 or higher, and the software version is lower than the version indicated for your monitor in the following table, then you need to upgrade the software before installing the adaptor. You can check the software version of your video monitor on the STATUS MENU.

Monitor model name	Software version
BVM-20E1/14E1/14E5	1.40 or higher
BVM-20F1/14F1/14F5	
BVM-20G1/14G1/14G5	1.10 or higher
BVM-D32E1W	1.20 or higher
BVM-D24E1W	
BVM-D20F1	

- When installing or moving adaptors, or fitting a cover plate over an unused slot, always **fit the BKM-21D as the last step of the operation**. If a BKM-21D is already installed, remove it temporarily while carrying out the other operations, then reinstall it last (see page 22(E)).

Functions

Decoders for Serial Digital Signals and Analog Composite Signals

The BKM-21D is equipped with a decoder for serial digital signals (525/625 component and NTSC/PAL composite), and with a decoder for analog composite NTSC and PAL signals.

Serial Digital and Analog Input and Output Signal Connectors

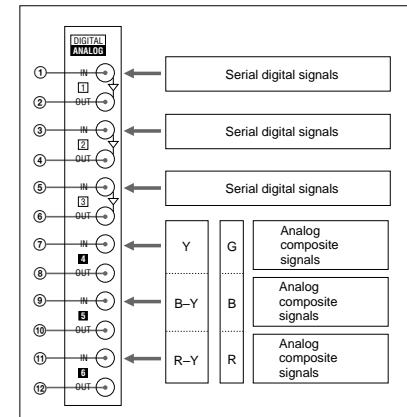
The BKM-21D is equipped with three input and three output connectors for serial digital signals, as well as three input and three output connectors for analog signals. Using the analog signal input connectors, you can input one Y/R-Y/B-Y or one RGB signal, or three analog composite signals. The types of analog composite signals that may be input vary depending on the input adaptors installed in other input option slots (see page 20(E)).

Using the Input and Output Connectors

For information about installing the BKM-21D in a video monitor input option slot, see "Installing into Video Monitors" (page 21(E)).

Configuration of Input/Output Connectors and Signals that may be Input

The configuration of the input and output connectors and the signals that may be input are shown below.



BKM-21D SDI Multi Decoder Adaptor

Input of serial digital signals

You can input serial digital signals to connectors ①, ③, and ⑤. You can obtain active loop-through output of those signals from connectors ②, ④, and ⑥, respectively.

You need not attach 75-ohm terminators to connectors ②, ④, and ⑥.

Input of analog composite signals

You can input analog composite signals to connectors ⑦, ⑨, and ⑪. You can obtain loop-through output of those signals from connectors ⑧, ⑩, and ⑫, respectively. If you do not wish to use loop-through output, attach 75-ohm terminators to connectors ⑧, ⑩, and ⑫.

Input of Y/R-Y/B-Y or RGB signals

You can input a Y or G signal to connector ⑦, an B-Y or B signal to connector ⑨, and a R-Y or R signal to connector ⑪. You can obtain loop-through output of those signals from connectors ⑧, ⑩, and ⑫, respectively. If you do not wish to use loop-through output, attach 75-ohm terminators to connectors ⑧, ⑩, and ⑫.

Assigning Input Signals to Connectors

Before inputting signals to the BKM-21D, you must specify the type and format of the signal that will be input to each connector. To assign input signals to each connector, use the on-screen INPUT CONFIGURATION menu of your video monitor.

For information about using the INPUT CONFIGURATION menu, refer to the manual of your video monitor.

Specifications

General

Power requirements +5 V, ±6 V, -15 V (supplied from the monitor)

Power consumption 11 W

Recommended operating temperature 20°C to 30°C (68°F to 86°F)

Permissible operating temperature 0°C to 40°C (32°F to 104°F)

Operating humidity 0% to 90% (no condensation)

Maximum external dimensions (w/h/d)
25 × 256 × 245 mm
($3\frac{1}{32}$ × 10 $\frac{1}{8}$ × 9 $\frac{3}{4}$ inches)

Mass 770g (1 lb 11oz)

Input/Output Connectors

Digital input BNC × 3, with active loop-through output

Analog input BNC × 3, high impedance, with loop-through output

Signal Characteristics

Analog composite signals

Signal level 1 Vp-p +3 dB/-6 dB

Luminance signal

Frequency characteristics
Filter off: 100 Hz to 5 MHz ±1 dB
(monochrome signal)
Filter on: -30 dB relative to subcarrier frequency

Chrominance signals

Demodulation axis
NTSC, PAL: R-Y/B-Y
Chrominance signal band (R-Y, B-Y)
NTSC
COMB filter:
0.9 MHz-3dB
TRAP/BPF filter:
0.7 MHz-3dB

PAL

COMB filter:
1.1 MHz-3dB
TRAP/BPF filter:
0.9 MHz-3dB

Subcarrier reproduction error
±1% max.

Subcarrier synchronization range
±150 Hz min.

Chroma phase adjustment range
NTSC: ±15° min.
PAL: ±10° min.

DG (differential gain) APL 10% to 90%
2% max.

DP (differential phase) APL 10% to 90%
2° max.

Chrominance signal/luminance signal
Delay error 35 nsec max.

Gain error 5% max.

Aperture compensation

6 dB min. (5 MHz)
Return loss -46 dB min. (7 MHz)

Analog component (Y/R-Y/B-Y, RGB) signals

Signal level

Y/R-Y/B-Y Y: 1 Vp-p ±6 dB
R-Y: 0.7 Vp-p ±6 dB
B-Y: 0.7 Vp-p ±6 dB
R/G/B 1 Vp-p ±6 dB (sync on G)

Frequency characteristics

Y 100 Hz to 10 MHz ±1 dB
R-Y/B-Y 100 Hz to 6 MHz ±1 dB
R/G/B 100 Hz to 10 MHz ±1 dB

Chrominance signal/luminance signal

Delay time error
30 nsec max.
Gain error 5% max.

Aperture compensation (Y/R-Y/B-Y)

6 dB min. (5 MHz)
Return loss -46 dB min. (7 MHz)

Digital component (525, 625) and composite (NTSC, PAL) signals

Component

Sampling frequency
Y: 13.5 MHz
R-Y/B-Y: 6.75 MHz

Frequency characteristics

Y: 100 Hz to 5.75 MHz ±1 dB
R-Y/B-Y: 100 Hz to 2.75 MHz
±1 dB

K factor 1% max. (2T pulse)

Composite

Sampling frequency
NTSC: 14.3 MHz
PAL: 17.7 MHz

Frequency bandwidth

Y: 100 Hz to 5 MHz ±1 dB
R-Y/B-Y:

NTSC

COMB filter:
0.9 MHz-3dB
TRAP/BPF filter:
0.7 MHz-3dB

PAL

COMB filter:
1.1 MHz-3dB
TRAP/BPF filter:
0.9 MHz-3dB

Chrominance/luminance signals

Delay time error: 35 nsec max.
Gain error: 5% max.

K factor 1% max. (2T pulse)

Aperture compensation
6 dB min. (5 MHz)

Quantization 10 bits/sample
Transmission distance

200 m (approx. 656 ft) max.
(When using 5C-2V coaxial cables (Fujikura, Inc.) or equivalent.)
Return loss 5 MHz to 270 MHz -15 dB min.

Accessories Supplied

Installation Manual (1)

Design and specifications are subject to change without notice.

Combination of Multiple Adaptors

You can configure an input and output connector panel by installing any combination of adaptors in the input option slots on the rear panel of the video monitor.

By combining adaptors of different types, you gain access to a wider range of input signals than would be possible with a single adaptor type. The input signals made available by different combinations of adaptor types are shown in the table below.

The number of input option slots varies with video monitors, and to specify signal types for each input connector, use the on-screen INPUT CONFIGURATION menu of your video monitor.

Note

Only one BKM-22X board can be installed in the monitor together with either the BKM-20D or the BKM-21D.

		Adaptor name							
		BKM-20D SDI 4:2:2 Decoder Adaptor	BKM-21D SDI Multi Decoder Adaptor	BKM-24N NTSC Decoder Adaptor	BKM-25P PAL Decoder Adaptor	BKM-26M PAL-M Decoder Adaptor	BKM-27T Tri- Standard Decoder Adaptor	BKM-22X SDI Input Expansion Adaptor	BKM-28X Analog Input Expansion Adaptor
Serial digital input	Component 525/625	Ⓐ	Ⓐ					○	
	Composite NTSC	○	Ⓐ					○	
	Composite PAL	○	Ⓐ					○	
Analog input	Composite NTSC	○	Ⓐ	Ⓐ	○	○	Ⓐ	○	○
	Composite PAL	○	○	○	○	Ⓐ	○	○	○
	Composite PAL-M	○	○	○	○	Ⓐ	○	○	○
	Composite SECAM	○	○	○	○	○	Ⓐ	○	○
	Y/R-Y/B-Y 525/625	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ	Ⓐ
	RGB 525/ 625	Ⓐ	Ⓐ	Ⓐ	Ⓐ	○	Ⓐ	Ⓐ	Ⓐ
	Y/C NTSC			Ⓐ	○	○	Ⓐ		○
	Y/C PAL				○	Ⓐ	○		○
	Y/C PAL-M				○	○	Ⓐ		○
Number of digital inputs		3	3	—	—	—	—	3	—
Number of analog input		3	3	6	6	6	6	3	6

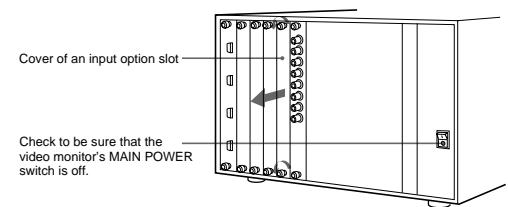
Ⓐ: Independent input possible

○: Input possible when used with decoder adaptor

Installing into Video Monitors

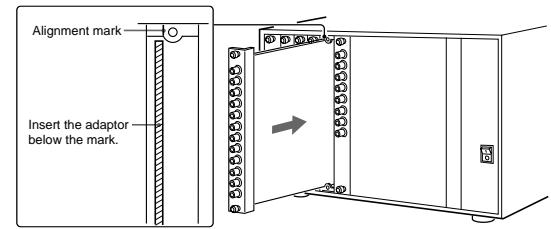
Each adaptor can be installed in any input option slot. Always turn your video monitor's MAIN POWER switch off before installing or removing adaptors.

1 Remove the cover of an input option slot on the rear panel of your video monitor.

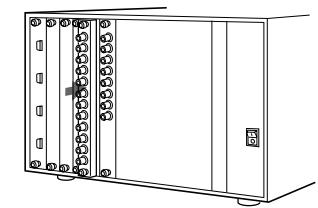


Check to be sure that the video monitor's MAIN POWER switch is off.

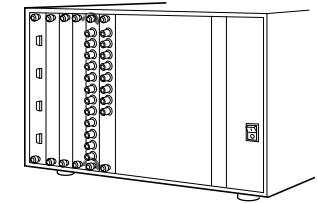
2 Insert the adaptor below the alignment mark on the left of the upper screw hole of the slot.



3 Push the adaptor in until it is firmly seated in the connector inside your video monitor.



4 Tighten the both screws to retain the adaptor.

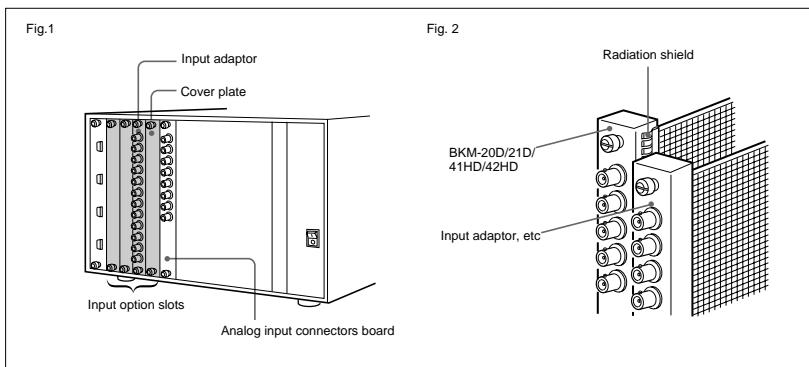


Installing into Video Monitors

Note on using the BKM-20D/21D/41HD/42HD

When one of the input option slots on the rear of the monitor has a BKM-20D/21D/41HD/42HD SDI Decoder Adaptor (option) installed, if the slot to the right has another adaptor or the analog input

connectors board installed, or a cover plate fitted (see Fig. 1), the radiation shield (see Fig. 2) of the BKM-20D/21D/41HD/42HD may be damaged or detached.



Sony Corporation

Communication System Solutions Network Company

BKM-21D
3-810-095-06(1)

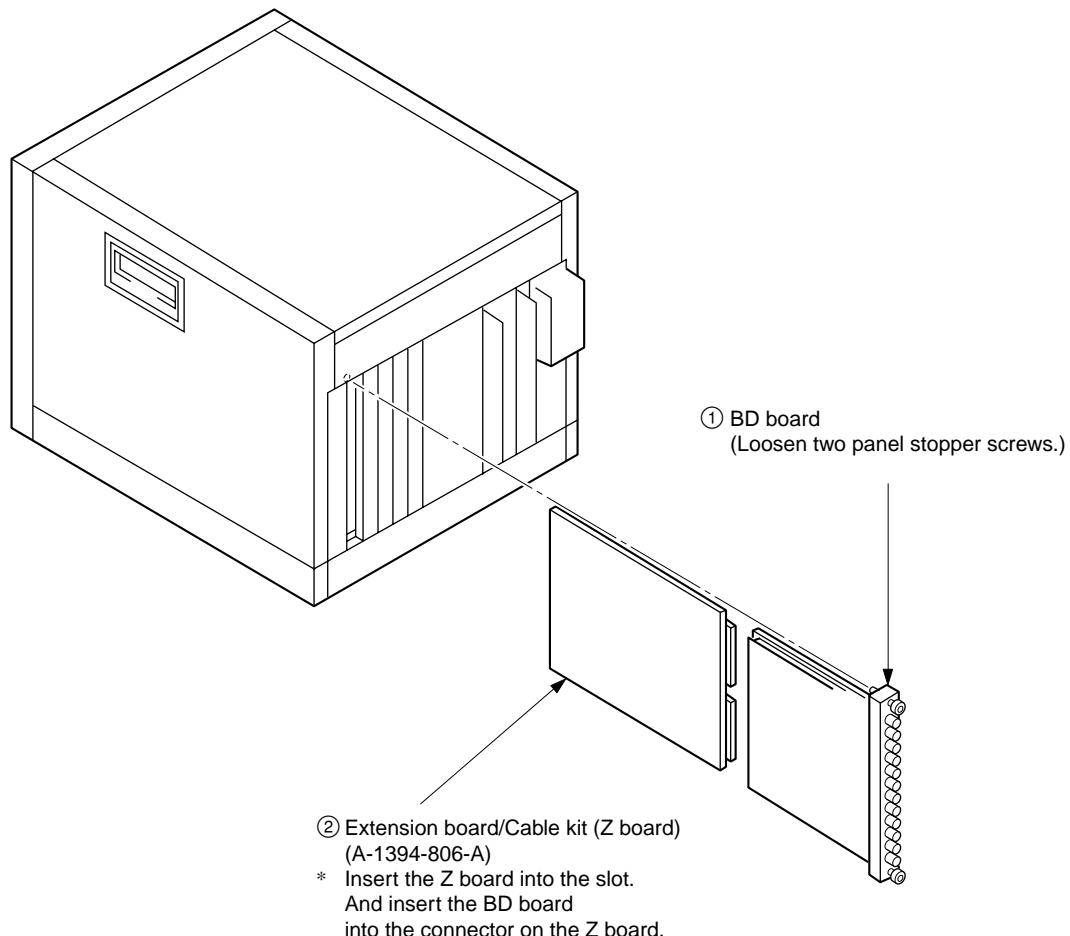
<http://www.world.sony.com/>

Printed in Japan
2001.02.08
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Section 2

Service Informations

2-1. BD Board Removal and Check



Section 3

Electrical Adjustments

BKM-21D is an optional board for the BVM series monitors and unable to operate on its own. To adjust and measure it, BKM-21D must be mounted with a BVM series monitor. The BVM series monitor used in these adjustments should satisfy the respective specifications and should equip with the software after versions (STATUS MENU) mentioned below or higher.

Monitor Model No.	Destination	SoftwareVersion
BVM-20E1/14E1/14E5	J, U, E, A	1.40~
BVM-20F1/14F1/14F5	J, U, E, A	
BVM-20G1/14G1/14G5	J, U, E, A	1.10~
BVM-D32E1W	J, U, E, A	
BVM-D24E1W	J, U, E, A	1.20~
BVM-D20F1	J, U, E, A	

3-1. Preparations for BD Board Adjustments

Mount the BKM-21D via the extension board.

- Unless specified otherwise, input the color bar signal (100% WHITE REF 100% AMPL).

Set as follows in the INPUT CONFIGURATION menu of the SETUP menu.

• 01 CH

FORMAT NTSC-0
 SLOT NO n (Set to the slot number with the BKM-21D inserted)
 INPUT NO 4
 YC SEP 3 LINES COMB
 SYNC MODE INT
 APERTURE OFF
 FILTER OFF
 CONTROL PRESET
 H PHASE 000

• 02 CH

FORMAT PAL-S
 SLOT NO n (Set to the slot number with the BKM-21D inserted)
 INPUT NO 4
 Same as 01 CH for others

• 03 CH

FORMAT PAL-D
 SLOT NO n (Set to the slot number with the BKM-21D inserted)
 INPUT NO 4
 Same as 01 CH for others

• 04 CH

FORMAT YUV
 SLOT NO n (Set to the slot number with the BKM-21D inserted)
 INPUT NO 456
 SYNC MODE INT

• 05 CH

FORMAT RGB
 SLOT NO n (Set to the slot number with the BKM-21D inserted)
 INPUT NO 456
 SYNC MODE INT

• 06 CH

FORMAT SDI 422
 SLOT NO n (Set to the slot number with the BKM-21D inserted)
 INPUT NO 1
 SYNC MODE INT

• 07 CH

FORMAT SDI 422
 SLOT NO n (Set to the slot number with the BKM-21D inserted)
 INPUT NO 2
 SYNC MODE INT

• 08 CH

FORMAT SDI 422
 SLOT NO n (Set to the slot number with the BKM-21D inserted)
 INPUT NO 3
 SYNC MODE INT

• 09 CH

FORMAT SDI PAL-S
 SLOT NO n (Set to the slot number with the BKM-21D inserted)
 INPUT NO 1
 Same as 01 CH for others

- 10 CH

FORMAT SDI PAL-S

SLOT NO n (Set to the slot number with the
BKM-21D inserted)

INPUT NO 2

Same as 01 CH for others

- 11 CH

FORMAT SDI PAL-S

SLOT NO n (Set to the slot number with the
BKM-21D inserted)

INPUT NO 3

Same as 01CH for others

- 12 CH

FORMAT SDI NTSC

SLOT NO n (Set to the slot number with the
BKM-21D inserted)

INPUT NO 1

Same as 01 CH for others

- 13 CH

FORMAT SDI NTSC

SLOT NO n (Set to the slot number with the
BKM-21D inserted)

INPUT NO 2

Same as 01 CH for others

- 14 CH

FORMAT SDI NTSC

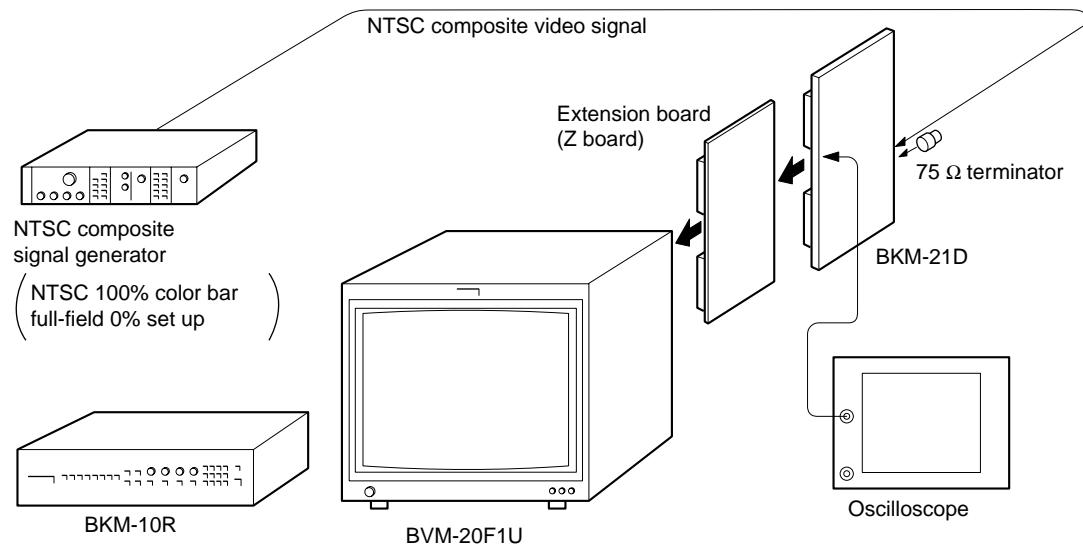
SLOT NO n (Set to the slot number with the
BKM-21D inserted.)

INPUT NO 3

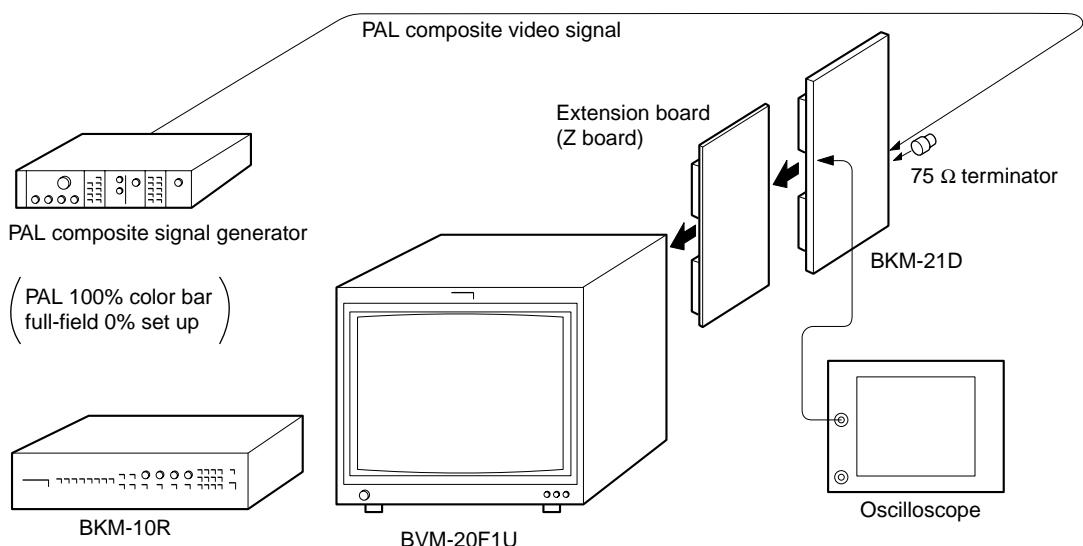
Same as 01 CH for others

[Connection]

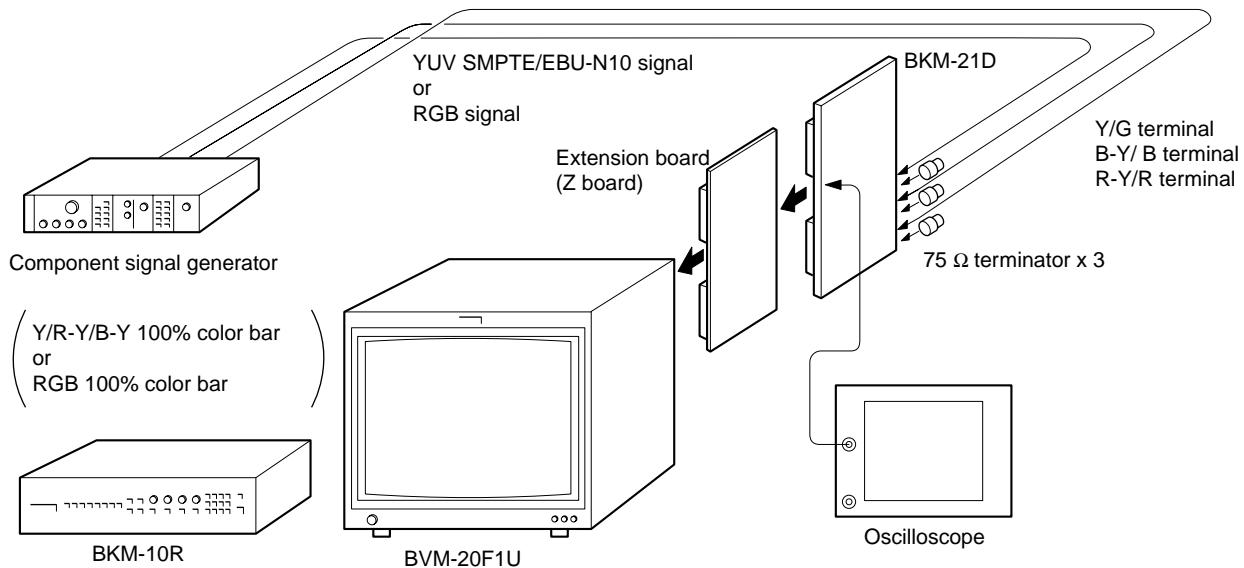
- Analog NTSC mode



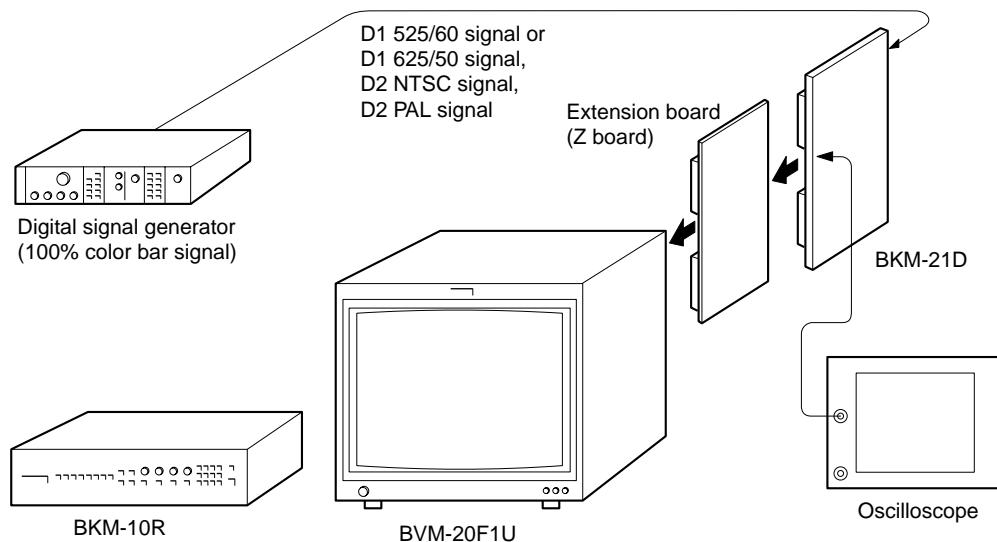
- Analog PAL mode



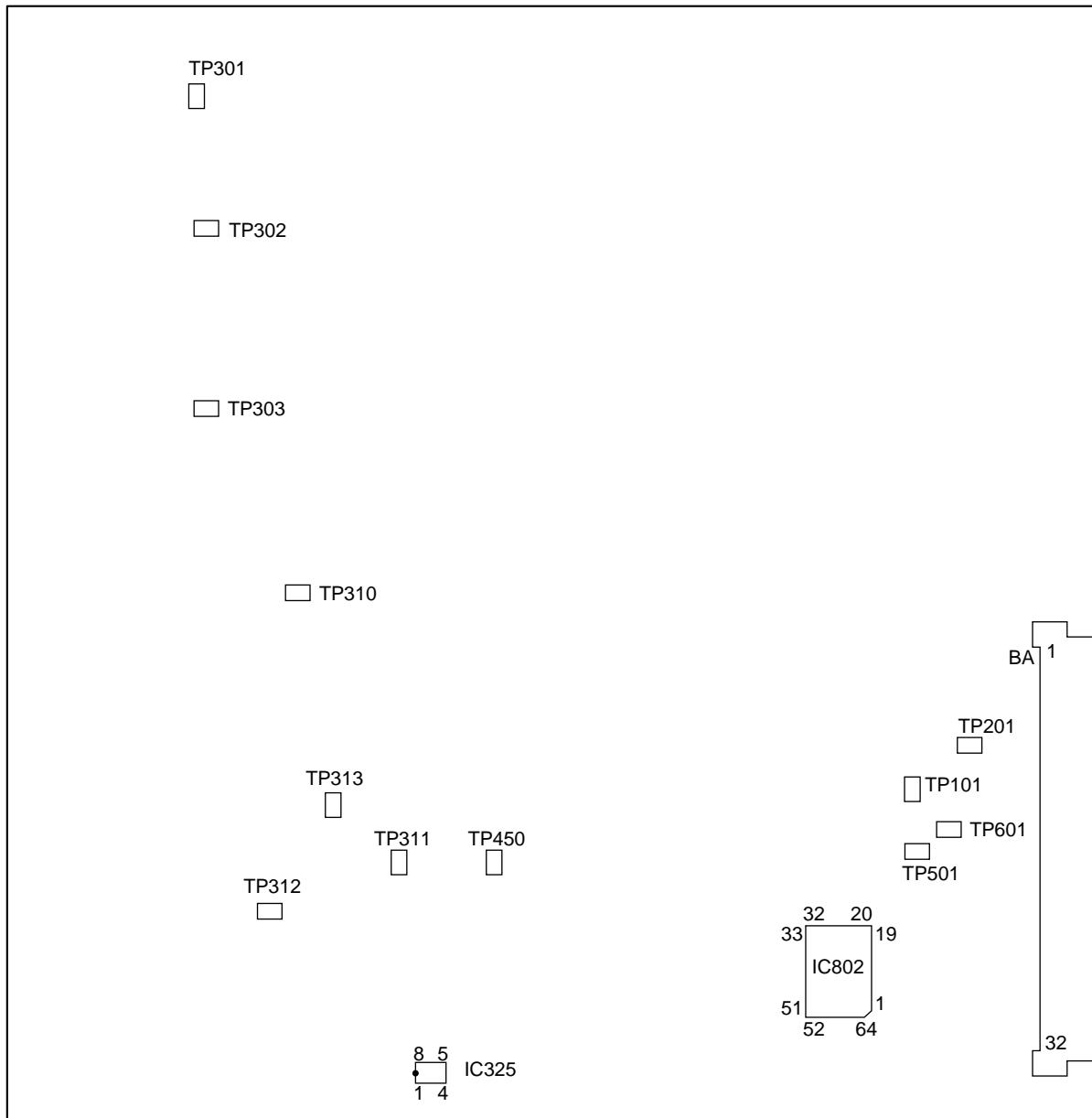
• **Analog component mode**



• **Digital mode**



[Layout of Adjustment-Related Parts]



BD BOARD (Component side)

3-2. Analog NTSC Mode Adjustment

Set CH 01.

3-2-1. NTSC Burst Gate Pulse Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

BGP-P (BURST GATE PULSE-POSITION)

BGP-W (BURST GATE PULSE-WIDTH)

1. Input the composite NTSC 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Connect the CH1 probe of the oscilloscope to Pin ⑦ of IC325 of the BD board and connect the CH2 probe to TP312 of the BD board.
3. Adjust the BGP-P (BURST GATE PULSE-POSITION) data so that the position A of the burst gate pulse satisfies the specification.
4. Adjust the BGP-W (BURST GATE PULSE-WIDTH) data so that the width B of the burst gate pulse satisfies the specification.

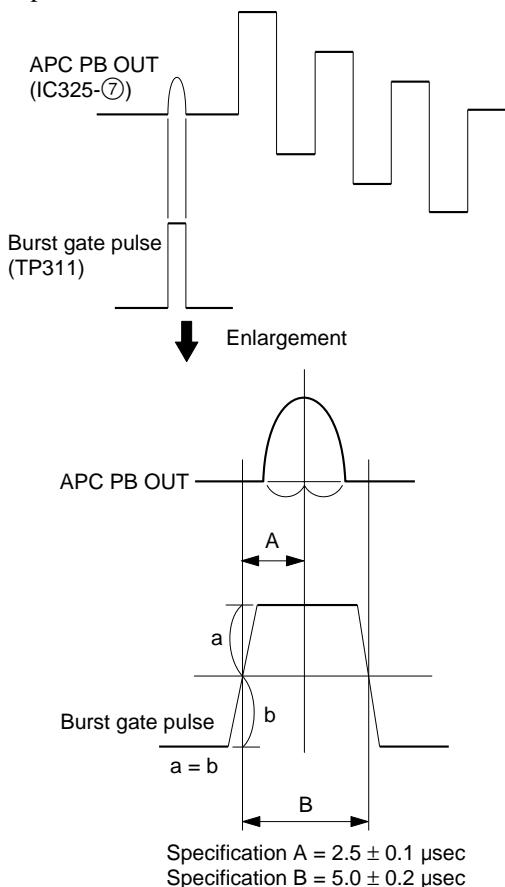


Fig. 2-1.

3-2-2. NTSC Chroma Clamp Pulse Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

CCP-P (CHROMA CLAMP PULSE-POSITION)

1. Input the composite NTSC 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Connect the CH1 probe of the oscilloscope to Pin ⑦ of IC325 of the BD board and connect the CH2 probe to TP312 of the BD board.
3. Adjust the CCP-P (CHROMA CLAMP PULSE-POSITION) data so that the position A of the chroma clamp pulse satisfies the specification.

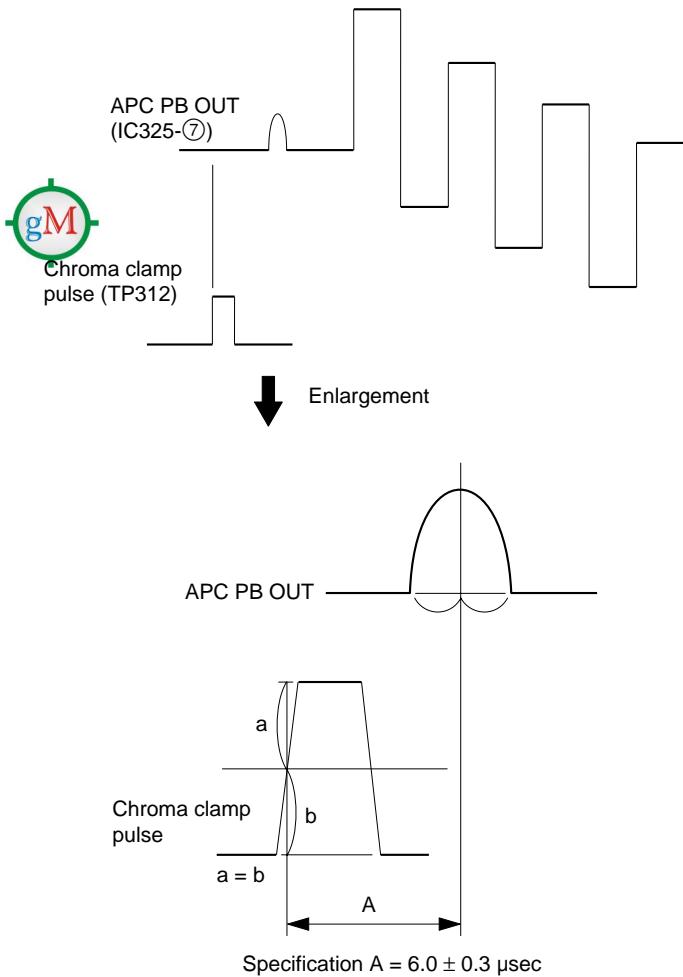


Fig. 2-2.

3-2-3. NTSC VCO Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

HOLD

1. Input the composite NTSC 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Connect the oscilloscope to TP450 of the BD board.
(DC100 mV/div)
3. Adjust the HOLD data so that the DC voltage of TP450 becomes 0 ± 100 mV.

3-2-4. NTSC A/D Input Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

A D LEVEL

1. Input the composite NTSC 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Connect the oscilloscope to TP310 of the BD board.
(DC500 mV/div)
3. Adjust the A D LEVEL data so that the A/D input level A satisfies the specification.

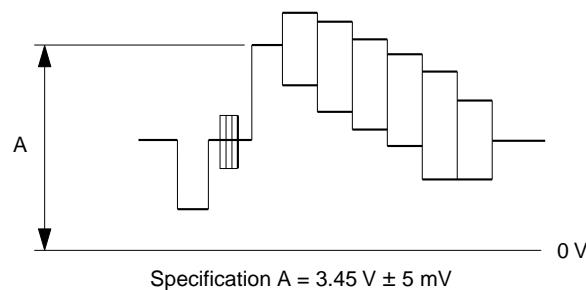


Fig. 2-3.

3-2-5. NTSC PHASE Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

PHASE OFFSET

PHASE

1. Input the composite NTSC at no R-Y signal into the VIDEO 4 input terminal
2. Connect the oscilloscope to TP601 of the BD board.
3. Check that the PHASE data is 128.
4. Adjust the PHASE OFFSET data so that the amplitude of the PR OUT signal of TP601 becomes minimum.

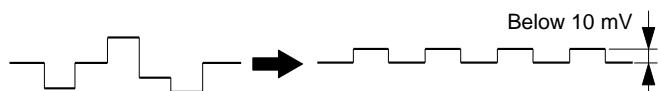


Fig. 2-4.

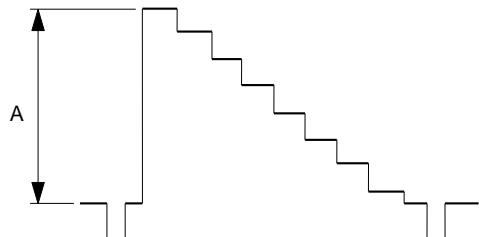
3-2-6. NTSC Output Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

Y LEVEL
PB LEVEL
PR LEVEL

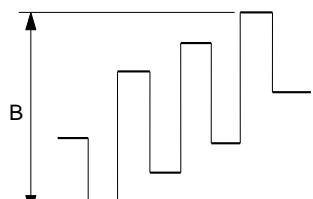
1. Input the composite NTSC 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Connect the oscilloscope to TP201 of the BD board.
3. Adjust the Y LEVEL data so that the Y OUT signal level A of TP201 satisfies the specification.



Specification A = 673 ± 10 mV

Fig. 2-5.

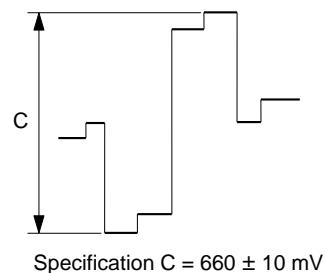
4. Connect the oscilloscope to TP501 of the BD board.
5. Adjust the PB LEVEL data so that the PB OUT signal level B of TP501 satisfies the specification.



Specification B = 660 ± 10 mV

Fig. 2-6.

6. Connect the oscilloscope to TP601 of the BD board.
7. Adjust the PR LEVEL data so that the PR OUT signal level C of TP601 satisfies the specification.



Specification C = 660 ± 10 mV

Fig. 2-7.

3-2-7. NTSC Y/C DELAY Adjustment (BD Board)

1. Input the composite NTSC 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set the data as follows at the BKM-21D menu of the MAINTENANCE menu.

BB0 : 0	RB0 : 0	YB0 : 1	YW0 : 0
BB1 : 1	RB1 : 1	YB1 : 0	YW1 : 1
BB2 : 0		YB2 : 0	
3. Connect the oscilloscope to the following measuring points.
CH1 : TP501 of the BD board (PB OUT)
CH2 : TP601 of the BD board (PR OUT)
EXT. TRIG. : Pin 20a of CN2 of the BD board
(H SYNC)
4. Set the oscilloscope to the delay mode and enlarge the border between yellow and cyan (Fig. 2-8 (1)).
(Setting the oscilloscope to the EXT.TRIG mode)
5. Using the vertical position knob of the oscilloscope, adjust the vertical position of the PB OUT waveform and PR OUT waveform as shown in Fig. 2-8 (2) and (3).
6. Using the horizontal position knob, adjust the PR OUT waveform center to the horizontal vertical center of the oscilloscope.
7. Adjust the data so that horizontal deviation A of the PB OUT waveform is within the specification as follows.

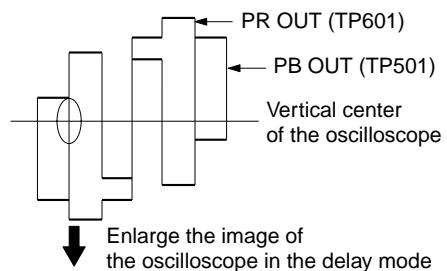
(If deviated to the left as shown in Fig. 2-8 (2).)

BB2 : 0 → 0 → 1
BB1 : 1 → 1 → 0
BB0 : 0 → 1 → 0

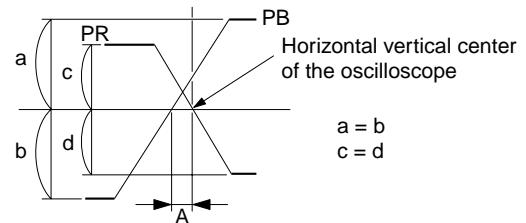
(If deviated to the right as shown in Fig. 2-8 (3).)

RB1 : 1 → 1
RB0 : 0 → 1

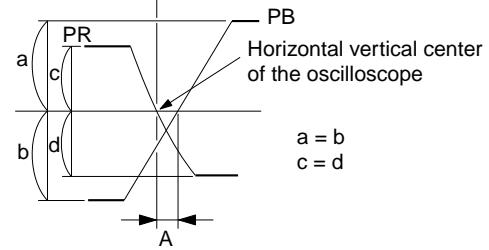
(1)



(2)



(3)



Specification A = Below 35 nsec

Fig. 2-8.

8. Connect the oscilloscope as follows.

CH1 : TP201 of BD board (Y OUT)

CH2 : TP601 of BD board (PR OUT)

EXT. TRIG. : Pin 20a of CN2 of the BD board (H SYNC)

9. Adjust the position of the oscilloscope and coincide the TP201 and TP 601 waveform as shown in Fig. 2-9 (1).

10. Set the oscilloscope to the delay mode and enlarge the border between the green and magenta as shown in Fig. 2-9 (2) and (3).

(Setting the oscilloscope to the EXT.TRIG mode)

11. Coincide the center of the TP601 (PR OUT) waveform to the horizontal vertical center of the oscilloscope.

12. Adjust the data as follows so that the horizontal deviation B of the TP201 (Y OUT) waveform is within the specification.

(If deviated to the left as shown in Fig. 2-9 (2).)

YW1: 1 → 1 → 1

YW0: 0 → 0 → 0

YB2 : 0 → 0 → 0

YB1 : 0 → 1 → 1

YB0 : 1 → 0 → 1

(If deviated to the right as shown in Fig. 2-9 (3).)

YW1: 1 → 1 → 0

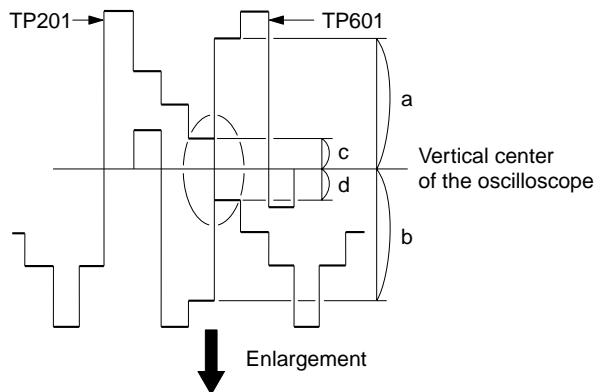
YW0: 0 → 0 → 1

YB2 : 0 → 0 → 1

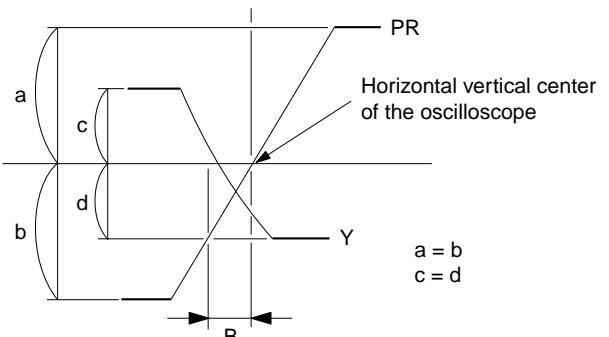
YB1 : 0 → 0 → 1

YB0 : 1 → 0 → 1

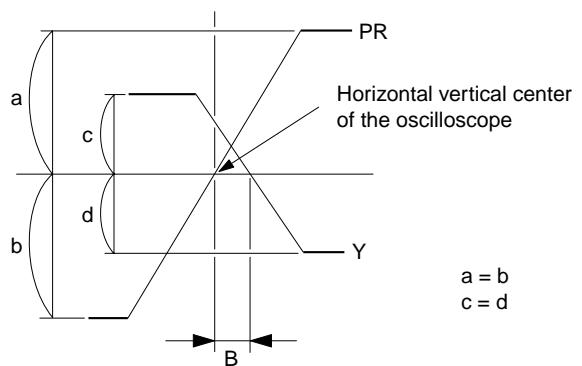
(1)



(2)



(3)



Specification B = Below 35 nsec

Fig. 2-9.

3-2-8. NTSC VIDEO OUT Level Adjustment (BD Board)

Note

For this adjustment, install the NTSC input adapter BKM-24N to the vacant slot.

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

V LEVEL (VIDEO LEVEL)

1. Input the composite NTSC 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Connect the oscilloscope to TP101 of the BD board.
3. Adjust the V LEVEL (VIDEO LEVEL) data so that the V I/O signal level A of TP101 satisfies the specification.

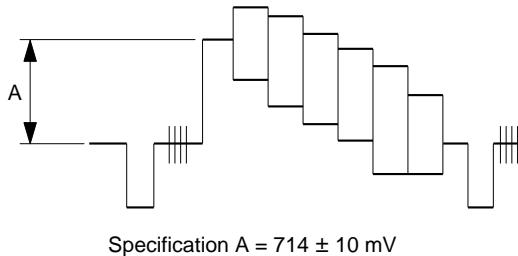


Fig. 2-10.

3-2-9. NTSC KILLER Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

KILLER LEVEL

1. Input the composite NTSC 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set the KILLER LEVEL data to 30.
3. Attenuate the input signal by 10 dB.
4. Connect the oscilloscope to Pin ⑯ of IC802 (KILLER-IN) of the BD board.
(DC 1 V/div)
5. Gradually increase the KILLER LEVEL data until the DC voltage of Pin ⑯ of IC802 changes from 5 V to 0 V.

3-3. Analog PAL Mode Adjustment

Set CH 02.

3-3-1. PAL-S Burst Gate Pulse Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

BGP-P (BURST GATE PULSE-POSITION)
BGP-W (BURST GATE PULSE-WIDTH)

1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Connect the CH1 probe of the oscilloscope to Pin ⑦ of IC325 of the BD board and connect the CH2 probe to TP311 of the BD board.
3. Adjust the BGP-P (BURST GATE PULSE-POSITION) data so that the position A of the burst gate pulse satisfies the specification.
4. Adjust the BGP-W (BURST GATE PULSE-WIDTH) data so that the width B of the burst gate pulse satisfies the specification.

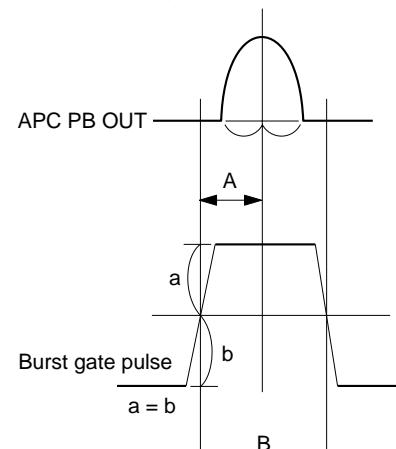
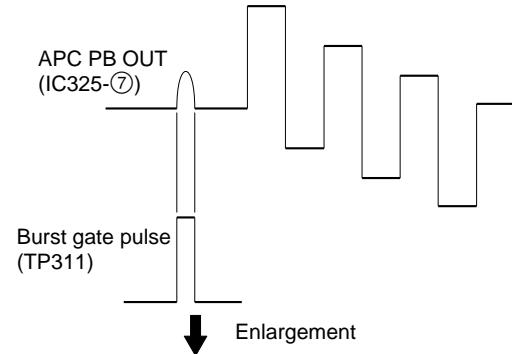


Fig. 3-1.

3-3-2. PAL-S Chroma Clamp Pulse Adjustment (BD Board)

1. Set 01 CH
FORMAT COMPOSITE NTSC
2. Read the following adjustment data at the BKM-21D menu of the MAINTENANCE menu.
CCP-P
3. Set 02 CH.
4. Set the following adjustment data to the same value as the NTSC mode data read at step 2 at the BKM-21D menu of the MAINTENANCE menu.
CCP-P

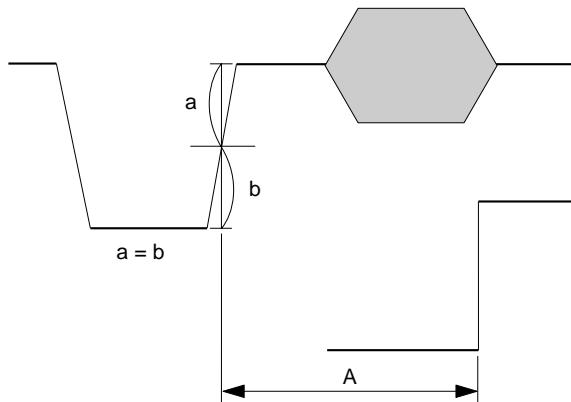
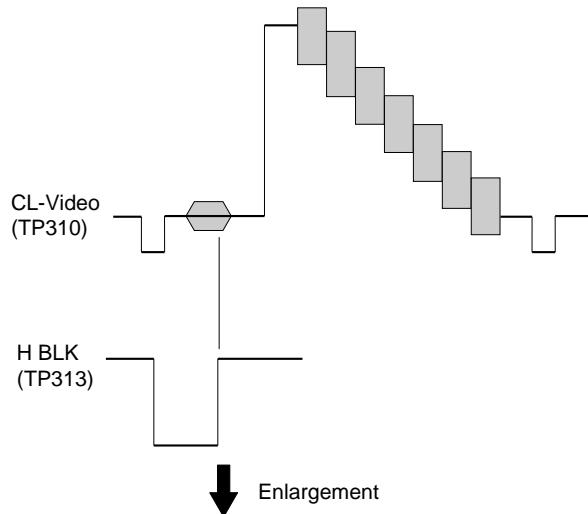
3-3-3. PAL H BLK Pulse Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

HBLK-W

1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 02 CH.
3. Connect the CH1 probe of the oscilloscope to TP310 (CL-VIDEO) of the BD board, and connect the CH2 probe to TP313 (H BLK) of the BD board.
4. Adjust the HBLK-W data so that the H BLK pulse width A satisfies the specifications.



Specification A = $2.8 \pm 0.1 \mu\text{sec}$

Fig. 3-2.

3-3-4. PAL VCO Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

HOLD

1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 02 CH.
3. Connect the oscilloscope to TP450 of the BD board.
(DC100 mV/div)
4. Adjust the HOLD data so that the DC voltage of TP450 becomes -500 ± 100 mV.

3-3-5. PAL A/D Input Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu

A D LEVEL

1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 02 CH.
3. Connect the oscilloscope to TP310 of the BD board.
(DC500 mV/div)
4. Adjust the A D LEVEL data so that the A/D input level "A" satisfies the specifications.

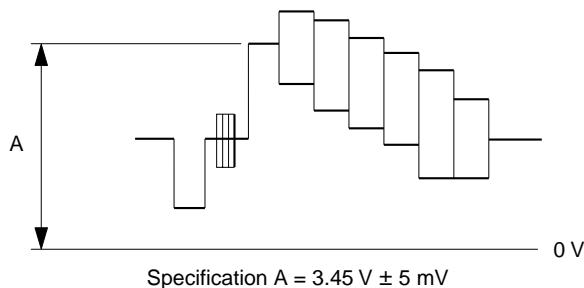


Fig. 3-3.

3-3-6. PAL-S PHASE Adjustment (BD Board)

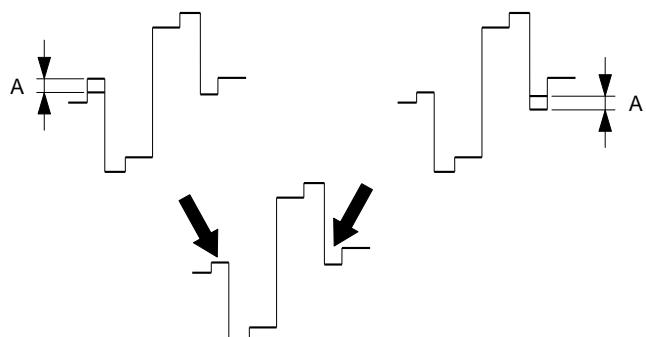
Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

PHASE OFFSET

PHASE

1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 02 CH.
3. Connect the oscilloscope to TP601 of the BD board.
4. Check that the PHASE data is 128.
5. Adjust the PHASE OFFSET data so that the line crawling A of the PR OUT signal of TP601 becomes minimum.



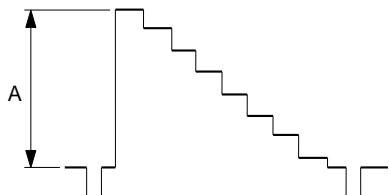
3-3-7. PAL-S Output Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

Y LEVEL
PB LEVEL
PR LEVEL

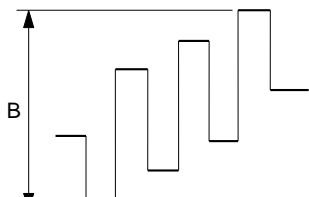
1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 02 CH.
3. Connect the oscilloscope to TP201 of the BD board.
4. Adjust the Y LEVEL data so that the Y OUT signal level A of TP201 satisfies the specification.



Specification A = 660 ± 10 mV

Fig. 3-5.

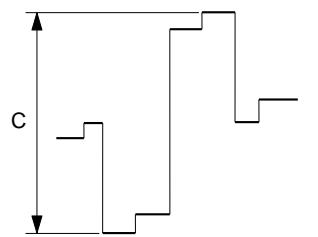
5. Connect the oscilloscope to TP501 of the BD board.
6. Adjust the PB LEVEL data so that the PB OUT signal level B of TP501 satisfies the specification.



Specification B = 660 ± 10 mV

Fig. 3-6.

7. Connect the oscilloscope to TP601 of the BD board.
8. Adjust the PR LEVEL data so that the PR OUT signal level C of TP601 satisfies the specification.



Specification C = 660 ± 10 mV

Fig. 3-7.

3-3-8. PAL-S Y/C DELAY Adjustment (BD Board)

1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 02 CH.
FORMAT COMPOSITE PAL S
3. Set the data as follows at the BKM-21D menu of the MAINTENANCE menu.

BB0 : 0	RB0 : 0	YB0 : 1	YW0 : 0
BB1 : 1	RB1 : 1	YB1 : 0	YW1 : 1
BB2 : 0		YB2 : 0	
4. Connect the oscilloscope to the following measuring points.
 CH1 : TP501 of the BD board (PB OUT)
 CH2 : TP601 of the BD board (PR OUT)
 EXT. TRIG. : Pin 20a of CN2 of the BD board (H SYNC)
5. Set the oscilloscope to the delay mode and enlarge the border between yellow and cyan (Fig. 3-8 (1)).
(Setting the oscilloscope to the EXT. TRIG mode)
6. Using the vertical position knob of the oscilloscope, adjust the vertical position of the PB OUT waveform and PR OUT waveform as shown in Fig. 3-8 (2) and (3).
7. Using the horizontal position knob, adjust the PR OUT waveform center to the horizontal vertical center of the oscilloscope.
8. Adjust the data so that the horizontal deviation A of the PB OUT waveform is within the specification as follows.

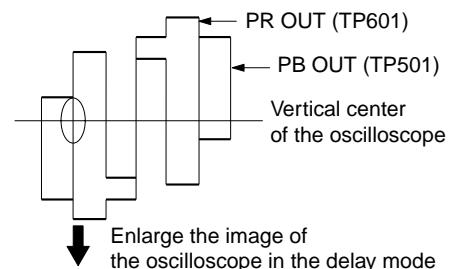
(When deviated to the left as shown in Fig. 3-8 (2).)

BB2 : 0 → 0 → 1
 BB1 : 1 → 1 → 0
 BB0 : 0 → 1 → 0

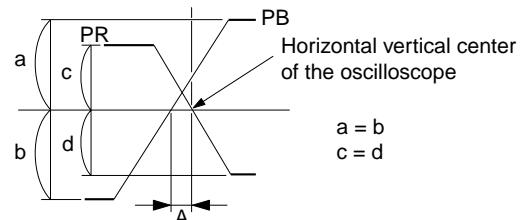
(When deviated to the right as shown in Fig. 3-8 (3).)

RB1 : 1 → 1
 RB0 : 0 → 1

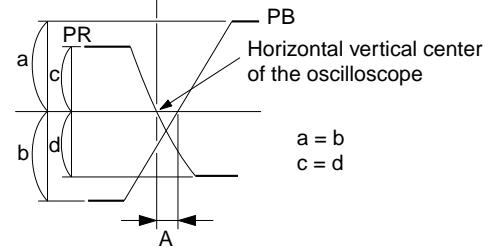
(1)



(2)



(3)



Specification A = Below 35 nsec

Fig. 3-8.

9. Connect the oscilloscope as follows.

CH1 : TP201 of BD board (Y OUT)

CH2 : TP601 of BD board (PR OUT)

EXT.TRIG. : Pin 20a of CN2 of the BD board

(H SYNC)

10. Adjust the position of the oscilloscope and coincide the TP201 and TP601 waveforms as shown in Fig. 3-9 (1).

11. Set the oscilloscope to the delay mode and enlarge the border between the green and magenta as shown in Fig. 3-9 (2) and (3).

(Setting the oscilloscope to the EXT.TRIG mode)

12. Coincide the center of the TP601 (PR OUT) waveform to the horizontal vertical center of the oscilloscope.

13. Adjust the data as follows so that the horizontal deviation B of the TP201 (Y OUT) waveform is within the specification.

(If deviated to the left as shown in Fig. 3-9 (2).)

YW1: 1 → 1 → 1

YW0: 0 → 0 → 0

YB2 : 0 → 0 → 0

YB1 : 0 → 1 → 1

YB0 : 1 → 0 → 1

(If deviated to the right as shown in Fig. 3-9 (3).)

YW1: 1 → 1 → 0

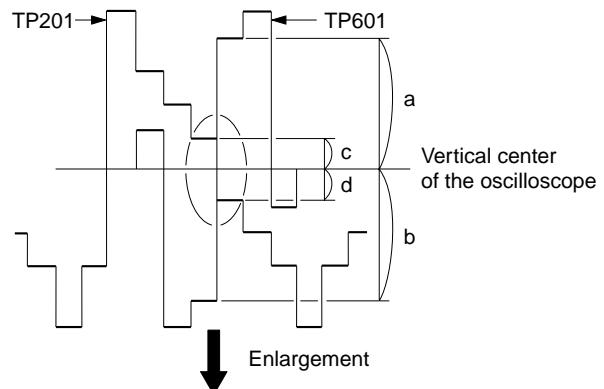
YW0: 0 → 0 → 1

YB2 : 0 → 0 → 1

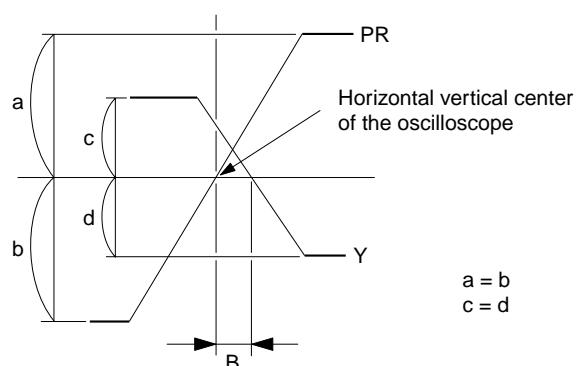
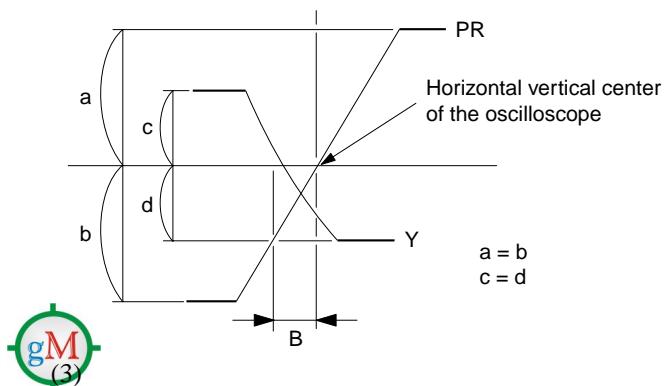
YB1 : 0 → 0 → 1

YB0 : 1 → 0 → 1

(1)



(2)



Specification B = Below 35 nsec

Fig. 3-9

3-3-9. PAL-S KILLER Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

KILLER LEVEL

1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 02 CH.
3. Set the KILLER LEVEL data to 30.
4. Attenuate the input signal by 10dB
5. Connect the oscilloscope to Pin ⑯ of IC802 (KILLER-IN) of the BD board.
(DC 1 V/div)
6. Gradually increase the KILLER LEVEL data until the DC voltage of Pin ⑯ changes from 5 V to 0 V.

3-3-10. PAL VIDEO OUT Level Adjustment (BD Board)

Note

- For this adjustment, install the NTSC input adapter BKM-25P to the vacant slot.
- The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

V LEVEL (VIDEO LEVEL)

1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Connect the oscilloscope to TP101 of the BD board.
3. Adjust the V LEVEL (VIDEO LEVEL) data so that the V I/O signal level A of TP101 satisfies the specification.

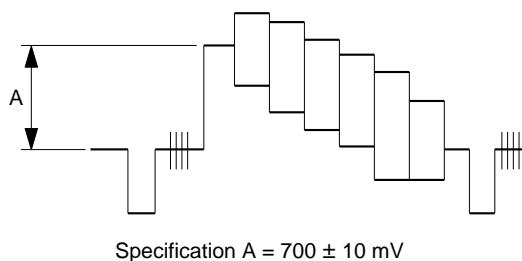


Fig. 3-10

3-3-11. PAL-D Burst Gate Pulse Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

BGP-P (BURST GATE PULSE-POSITION)

BGP-W (BURST GATE PULSE-WIDTH)

1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 02 CH.
3. Connect the CH1 probe of the oscilloscope to Pin ⑦ of IC325 of the BD board, and connect the CH2 probe to TP311 of the BD board.
4. Adjust the BGP-P (BURST GATE PULSE-POSITION) data so that the position A of the burst gate pulse satisfies the specification.
5. Adjust the BGP-W (BURST GATE PULSE-WIDTH) data so that the width B of the burst gate pulse satisfies the specification.

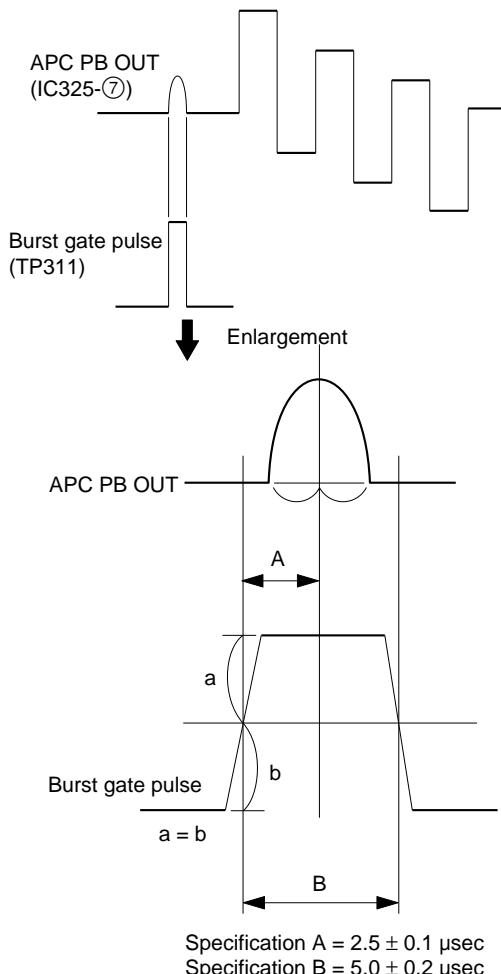


Fig. 3-11

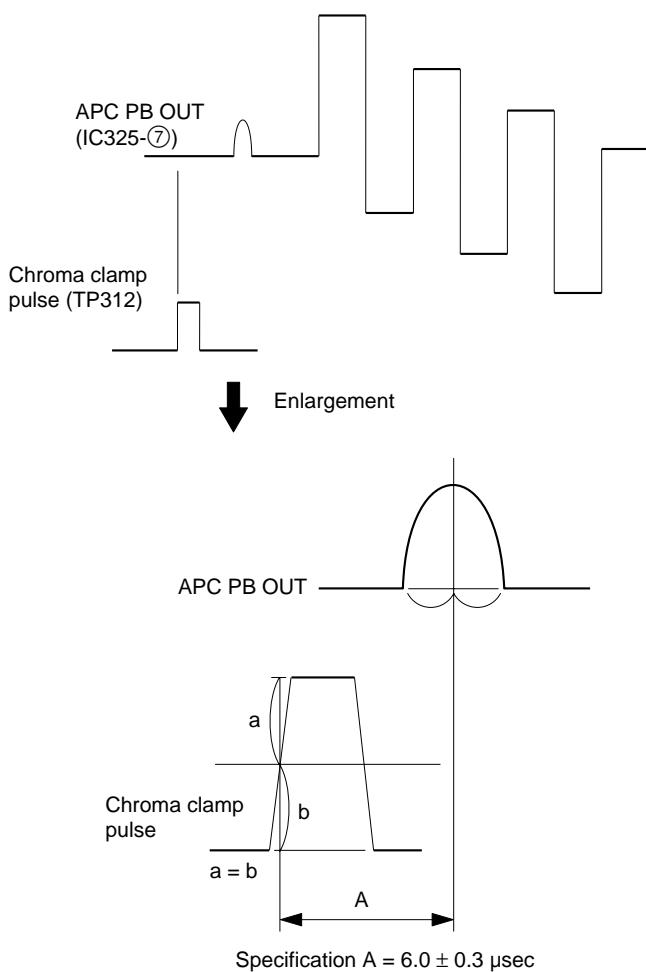
3-3-12. PAL-D Chroma Clamp Pulse Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

CCP-P (CHROMA CLAMP PULSE-POSITION)

1. Input the composite PAL 100% color bar into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 03 CH.
FORMAT COMPOSITE PAL D
3. Connect the CH1 probe of the oscilloscope to Pin ⑦ of IC325 of the BD board and connect the CH2 probe to TP312 of the BD board.
4. Adjust the CCP-P (CHROMA CLAMP PULSE-POSITION) data so that the position A of the chroma clamp pulse satisfies the specification.



3-3-13. PAL-D Y/C DELAY Adjustment (BD Board)

1. Set 02 CH.
2. Read the following adjustment data at the BKM-21D menu of the MAINTENANCE menu.

BB0	RB0	YB0	YW0
BB1	RB1	YB1	YW1
BB2		YB2	YW2

3. Set 03 CH.
4. Set the following adjustment data to the same value as the PAL-S mode data read at step 2 at the BKM-21D menu of the MAINTENANCE menu.

BB0	RB0
BB1	RB1
BB2	

5. Take YW1, YW0, YB2, YB1, and YB0 as 5-bit binary number (YW1 is MSB and YB0 is LSB), use the PAL-D mode value obtained by adding 00001 (01H) to the PAL-S mode value and set the following adjustment data.

YB0	YW0
YB1	YW1
YB2	

(Example)

	PAL-S Mode Adjustment Data	PAL-D Mode Adjustment Data
YW1	1	1
YW0	0	0
YB2	0	0
YB1	0	1
YB0	1	0
Binary (Hexadecimal)	10001 (11H)	10001 + 00001 = 10010 (11H + 01H = 12H)

Fig. 3-12.

3-3-14. PAL-D KILLER Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

KILLER LEVEL

1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 03 CH.
3. Set the KILLER LEVEL data to 30.
4. Attenuate the input signal by 10 dB.
5. Connect the oscilloscope to Pin ⑯ of IC802 (KILLER-IN) of the BD board.
(DC 1 V/div)
6. Gradually increase the KILLER LEVEL data until the DC voltage of Pin ⑯ of IC802 changes from 5 V to 0 V.

3-3-15. PAL-D PHASE Adjustment (BD Board)

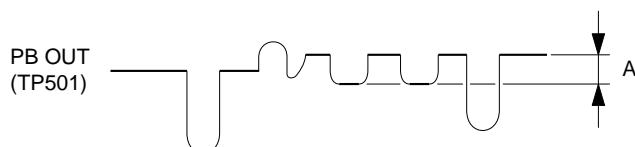
Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

PHASE OFFSET

PHASE

1. Input the anti-PAL signal into the VIDEO 4 input terminal.
2. Set 03 CH.
3. Connect the oscilloscope to TP501 of the BD board.
4. Check that the PHASE data is 128.
5. Adjust the PHASE OFFSET data so that the amplitude of the PB OUT signal of TP501 becomes minimum.



Specification A = Below 10 mV

Fig. 3-13.

3-3-16. PAL-D Output Level Adjustment (BD Board)

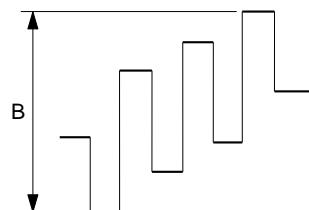
Note

The following Adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

PB LEVEL

PR LEVEL

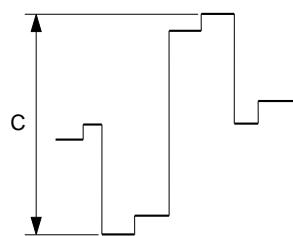
1. Input the composite PAL 100% color bar signal into the VIDEO 4 input terminal.
(Full-field 0% set up)
2. Set 03 CH.
3. Connect the oscilloscope to TP501 of the BD board.
4. Adjust the PB LEVEL data so that the PB OUT signal level B of TP501 satisfies the specification.



Specification B = 660 ± 10 mV

Fig. 3-14.

5. Connect the oscilloscope to TP601 of the BD board.
6. Adjust the PR LEVEL data so that the PR OUT signal level C of TP601 satisfies the specification.



Specification C = 660 ± 10 mV

Fig. 3-15.

3-4. Analog Component, RGB Adjustment

3-4-1. Y/R-Y/B-Y Level Adjustment (BD Board)

Note

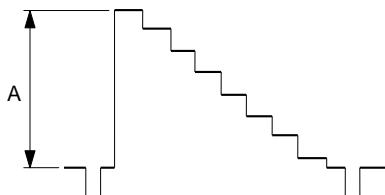
The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

Y LEVEL

PB LEVEL

PR LEVEL

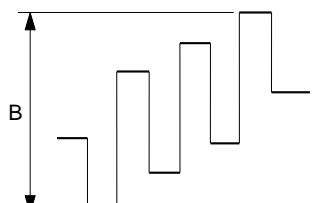
1. Set 04 CH.
2. Input the Y/R-Y/B-Y 100% color bar signal into INPUTS 4 (Y), 5 (B-Y), 6 (R-Y).
3. Connect the oscilloscope to TP201 of the BD board.
4. Adjust the Y LEVEL data so that the Y OUT signal level A of TP201 satisfies the specification.



Specification A = $660 \pm 10 \text{ mV}$

Fig. 4-1.

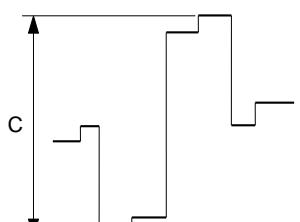
5. Connect the oscilloscope to TP501 of the BD board.
6. Adjust the PB LEVEL data so that the PB OUT signal level B of TP501 satisfies the specification.



Specification B = $660 \pm 10 \text{ mV}$

Fig. 4-2.

7. Connect the oscilloscope to TP601 of the BD board.
8. Adjust the PR LEVEL data so that the PR OUT signal level C of TP601 satisfies the specification.



Specification C = $660 \pm 10 \text{ mV}$

Fig. 4-3.

3-4-2. RGB Level Adjustment (BD Board)

Note

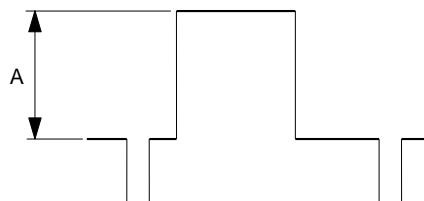
The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

Y LEVEL

PB LEVEL

RP LEVEL

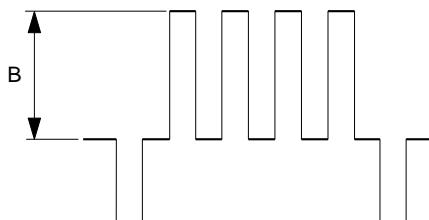
1. Set 05 CH.
2. Input the RGB 100% color bar signal into INPUTS 4 (G), 5 (B), and 6 (R).
3. Connect the oscilloscope to TP201 of the BD board.
4. Adjust the Y LEVEL data so that the G OUT signal level A of TP201 satisfies the specification.



Specification A = $660 \pm 10 \text{ mV}$

Fig. 4-4.

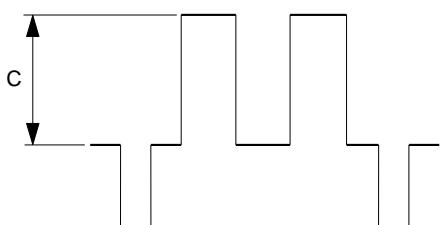
5. Connect the oscilloscope to TP501 of the BD board.
6. Adjust the PB LEVEL data so that the B OUT signal level B of TP501 satisfies the specification.



Specification B = $660 \pm 10 \text{ mV}$

Fig. 4-5.

7. Connect the oscilloscope to TP601 of the BD board.
8. Adjust the PR LEVEL data so that the R OUT signal level C of TP601 satisfies the specification.



Specification C = $660 \pm 10 \text{ mV}$

Fig. 4-6

3-5. Digital Mode Adjustment

3-5-1. SDI Freerunning Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

DA-FV
DB-FV
DC-FV

[SDI-A channel freerunning adjustment]

1. Set SDI-1, 2, and 3 terminals to no-signal inputs.
2. Set 06 CH.
3. Connect the frequency counter to TP301 of the BD board (DACLK).
4. Adjust the DA-FV data so that the DACLK frequency becomes 27.0 ± 0.5 MHz.
5. Set 09 CH.
6. Adjust the DA-FV data so that the DACLK frequency becomes 17.7 ± 0.5 MHz.
7. Set 12 CH.
8. Adjust the DA-FV data so that the DACLK frequency becomes 14.3 ± 0.5 MHz.

[SDI-B channel freerunning adjustment]

1. Set SDI-1, 2, and 3 terminals to no-signal inputs.
2. Set 07 CH.
3. Connect the frequency counter to TP302 of the BD board (DBCLK).
4. Adjust the DB-FV data so that the DBCLK frequency becomes 27.0 ± 0.5 MHz.
5. Set 10 CH.
6. Adjust the DB-FV data so that the DBCLK frequency becomes 17.7 ± 0.5 MHz.
7. Set 13 CH.
8. Adjust the DB-FV data so that the DBCLK frequency becomes 14.3 ± 0.5 MHz.

[SDI-C channel freerunning adjustment]

1. Set SDI-1, 2, and 3 terminals to no-signal inputs.
2. Set 08 CH.
3. Connect the frequency counter to TP303 of the BD board (DCCLK).
4. Adjust the DC-FV data so that the DCCLK frequency becomes 27.0 ± 0.5 MHz.
5. Set 11 CH.
6. Adjust the DC-FV data so that the DCCLK frequency becomes 17.7 ± 0.5 MHz.
7. Set 14 CH.
8. Adjust the DB-FV data so that the DCCLK frequency becomes 14.3 ± 0.5 MHz.

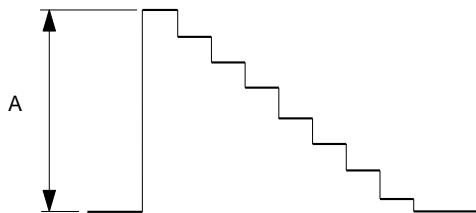
3-5-2. D1 Output Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

Y LEVEL
PB LEVEL
PR LEVEL

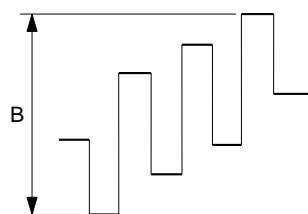
1. Input the D1 100% color bar signal (525/60) to the SDI-1 terminal.
2. Set 06 CH.
3. Connect the oscilloscope to TP201 of the BD board.
4. Adjust the Y LEVEL data so that the Y OUT signal level A of TP201 satisfies the specification.



Specification A = $660 \pm 10 \text{ mV}$

Fig. 5-1.

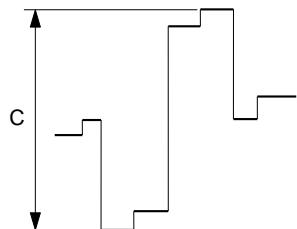
5. Connect the oscilloscope to TP501 of the BD board.
6. Adjust the PB LEVEL data so that the PB OUT signal level B of TP501 satisfies the specification.



Specification B = $660 \pm 10 \text{ mV}$

Fig. 5-2.

7. Connect the oscilloscope to TP601 of the BD board.
8. Adjust the PR LEVEL data so that the PR OUT signal level C of TP601 satisfies the specification.



Specification C = $660 \pm 10 \text{ mV}$

Fig. 5-3.

3-5-3. D1 Y/C DELAY Adjustment (BD Board)

1. Input the D1 100% color bar signal (525/60) to the SDI-1 terminal.
2. Set 06 CH.
3. Set the data as follows at the BKM-21D menu of the MAINTENANCE menu.

BB0 : 1	RB0 : 1	YB0 : 0	YW0 : 0
BB1 : 1	RB1 : 0	YB1 : 0	YW1 : 1
BB2 : 0		YB2 : 0	
4. Connect the oscilloscope to the following measuring points.
 - CH 1 : TP501 of the BD board (PB OUT)
 - CH 2 : TP601 of the BD board (PR OUT)
 - EXT.TRIG. : Pin 20a of CN2 of the BD board (H SYNC)
5. Set the oscilloscope to the delay mode and enlarge the border between yellow and cyan (Fig. 5-4 (1)).
(Setting the oscilloscope to the EXT.TRIG mode)
6. Using the vertical position knob of the oscilloscope, adjust the vertical position of the PB OUT waveform and PR OUT waveform as shown in Fig. 5-4 (2) and (3).
7. Using the horizontal position knob, adjust the PR OUT waveform center to the horizontal vertical center of the oscilloscope.
8. Adjust the data as follows so that the horizontal deviation A of the PB OUT waveform is within the specification.

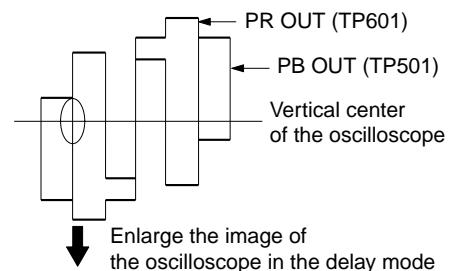
(If deviated to the left as shown in Fig.5-4 (2).)

BB2 : 0 → 1 → 1
BB1 : 1 → 0 → 0
BB0 : 1 → 0 → 1

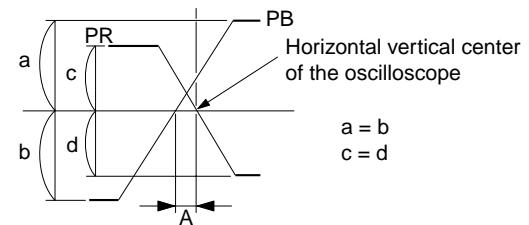
(If deviated to the right as shown in Fig.5-4 (3).)

RB1 : 0 → 1
RB0 : 1 → 0

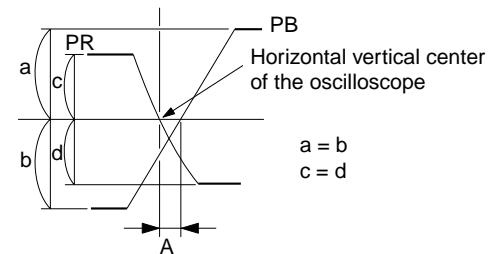
(1)



(2)



(3)



Specification A = Below 30 nsec

Fig. 5-4.

9. Connect the oscilloscope as follows.
 CH1: TP201 of BD board (Y OUT)
 CH2 : TP601 of BD board (PR OUT)
 EXT. TRING. : Pin 20a of CN2 of BD board
 (H SYNC)
10. Adjust the position of the oscilloscope and coincide the TP201 and TP601 waveforms as shown in Fig.5-5 (1).
11. Set the oscilloscope to the delay mode and enlarge the border between the green and magente as shown in Fig.5-5 (2) and (3).
 (Setting the oscilloscope to the EXT. TRING mode.)
12. Conicide the center of the TP601 (PR OUT) waveform to the horizontal vertical center of the oscilloscope.
13. Adjust the data as follows so that the horizontal deviation B of the TP201 (Y OUT) waveform is within the specification.

(If deviated to the left as shown in Fig. 5-5 (2).)

$YW1 : 1 \rightarrow 1 \rightarrow 1$
 $YW0 : 0 \rightarrow 0 \rightarrow 0$
 $YB2 : 0 \rightarrow 0 \rightarrow 0$
 $YB1 : 0 \rightarrow 0 \rightarrow 1$
 $YB0 : 0 \rightarrow 1 \rightarrow 0$

(If deviated to the right as shown in Fig. 5-5 (3).)

$YW1 : 1 \rightarrow 0 \rightarrow 0$
 $YW0 : 0 \rightarrow 1 \rightarrow 1$
 $YB2 : 0 \rightarrow 1 \rightarrow 1$
 $YB1 : 0 \rightarrow 1 \rightarrow 1$
 $YB0 : 0 \rightarrow 1 \rightarrow 0$

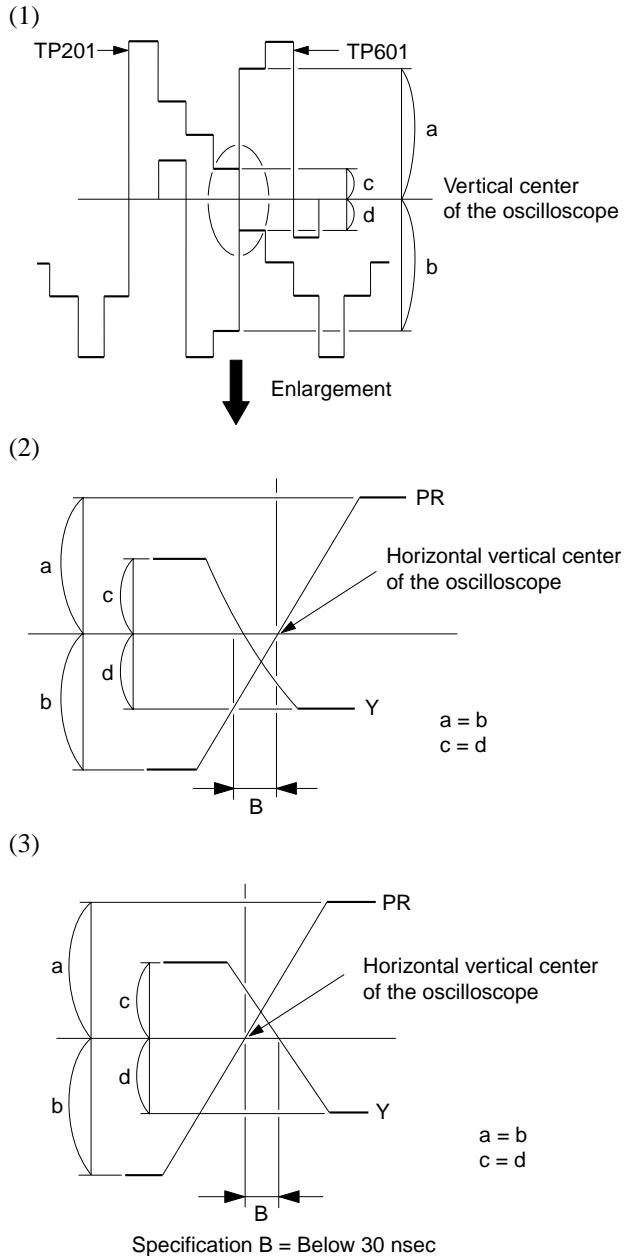


Fig. 5-5.

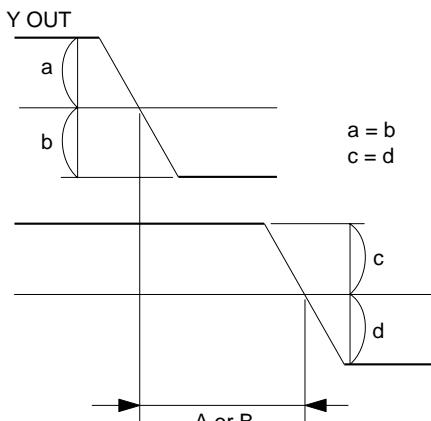
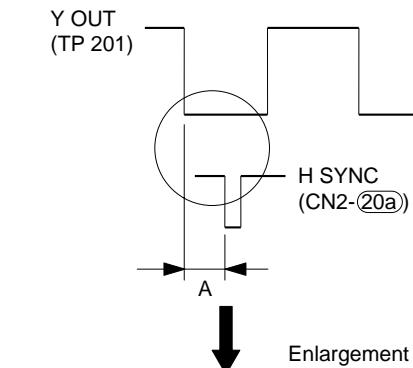
3-5-4. D1 H PHASE Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

CCP-P (CHROMA CLAMP PULSE-POSITION)

1. Input the D1 white 100% full field signal (525/60) into the SDI-1 terminal.
2. Set 06 CH.
3. Connect the oscilloscope to the following measuring points.
 - CH1 : TP201 of the BD board (Y OUT)
 - CH2 : Pin 20a of CN2 of the BD board (H SYNC)
4. Adjust the CCP-P (CHROMA CLAMP PULSE-POSITION) data so that the H SYNC position A satisfies the specification.
5. Input the D1 white 100% full field signal (625/50) into the SDI-A terminal.
6. Adjust the CCP-P data so that the position of the H SYNC B satisfies the specification.



Specification A = $2.1 \pm 0.1 \mu\text{sec}$ (525/60)
 Specification B = $2.1 \pm 0.1 \mu\text{sec}$ (625/50)

Fig. 5-6.

3-5-5. D2 NTSC A/D Input Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

A D LEVEL

1. Input the D2 NTSC 100% color bar signal into the SDI-1 input terminal.
 (Full-field 0% set up)
2. Connect the oscilloscope to TP310 of the BD board.
3. Adjust the A D LEVEL data so that the A/D input level A satisfies the specification.

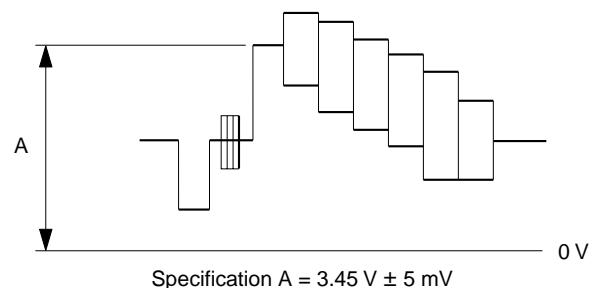


Fig. 5-7.

3-5-6. D2 NTSC PHASE Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

PHASE OFFSET

1. Set CH 01.
2. Read the adjusted PHASE OFFSET data from the BKM-21D menu of the MAINTENANCE menu.
3. Set CH 12.
4. Set the adjusted PHASE OFFSET data to the same value as the analog NTSC mode data that is read at step 2 from the BKM-21D menu of the MAINTENANCE menu.

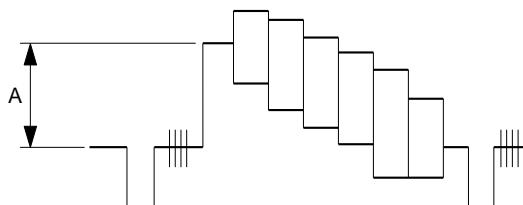
3-5-7. D2 NTSC VIDEO OUT Level Adjustment (BD Board)

Note

- For this adjustment, install the NTSC input adapter BKM-24N to the vacant slot.
- The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

V LEVEL (VIDEO LEVEL)

1. Input the D2 NTSC 100% color bar signal into the SDI-1 input terminal.
(Full-field 0% set up)
2. Connect the oscilloscope to TP101 of the BD board.
3. Adjust the V LEVEL (VIDEO LEVEL) data so that the V I/O signal level A of TP101 satisfies the specification.



Specification A = 714 ± 10 mV

Fig. 5-8.

3-5-8. D2 NTSC Output Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

Y LEVEL

PB LEVEL

PR LEVEL

1. Input the D2 NTSC 100% color bar signal to the SDI-1 terminal.
2. Set CH 12.
3. Connect the oscilloscope to TP201 of the BD board.
4. Adjust the Y LEVEL data so that the Y OUT signal level A of TP201 satisfies the specification.

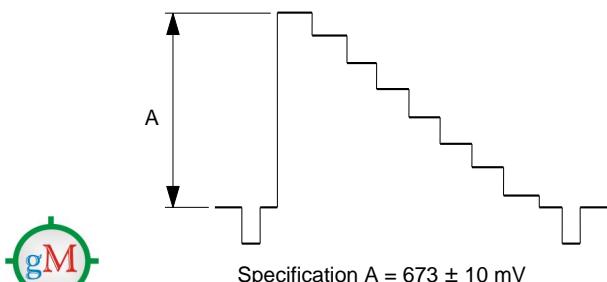
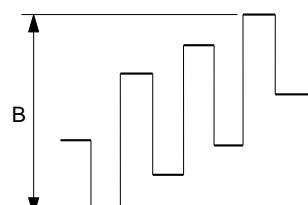


Fig. 5-9

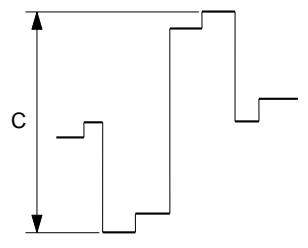
5. Connect the oscilloscope to TP501 of the BD board.
6. Adjust the PB LEVEL data so that the PB OUT signal level B of TP501 satisfies the specification.



Specification B = 660 ± 10 mV

Fig. 5-10.

7. Connect the oscilloscope to TP601 of the BD board.
8. Adjust the PR LEVEL data so that the PR OUT signal level C of TP601 satisfies the specification.



Specification C = 660 ± 10 mV

Fig. 5-11.

3-5-9. D2 PAL A/D Input Level Adjustment (BD Board)

Note

The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

A D LEVEL

1. Input the D2 PAL 100% color bar signal into the SDI-1 input terminal.
(Full-field 0% set up)
2. Set 09 CH.
3. Connect the oscilloscope to TP310 of the BD board.
(DC500 mV/div)
4. Adjust the A D LEVEL data so that the A/D input level "A" satisfies the specifications.

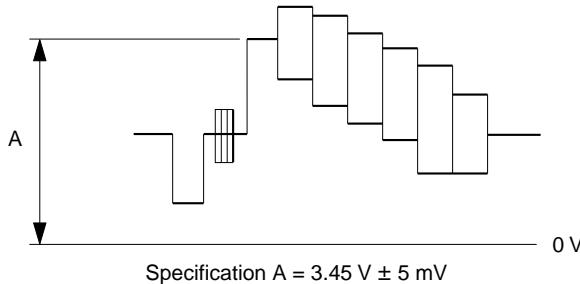


Fig. 5-12.

3-5-10. D2 PAL VIDEO OUT Level Adjustment (BD Board)

Notes

- For this adjustment, install the NTSC input adapter BKM-25P to the vacant slot.
- The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

V LEVEL (VIDEO LEVEL)

1. Input the D2 PAL 100% color bar signal into the SDI-1 input terminal.
(Full-field 0% set up)
2. Connect the oscilloscope to TP101 of the BD board.
3. Adjust the V LEVEL (VIDEO LEVEL) data so that the V I/O signal level A of TP101 satisfies the specification.

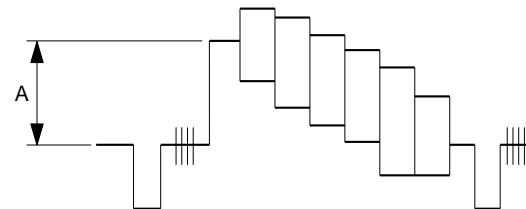


Fig. 5-13.

3-5-11. D2 PAL Output Level Adjustment (BD Board)

Note

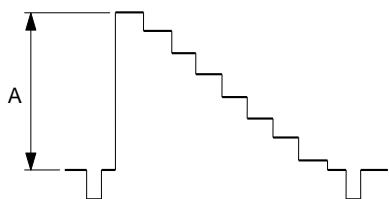
The following adjustment menu is below the BKM-21D menu of the MAINTENANCE menu.

Y LEVEL

PB LEVEL

PR LEVEL

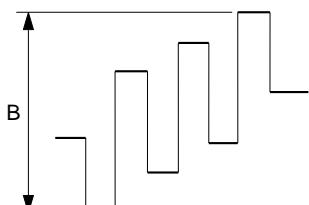
1. Input the D2 PAL 100% color bar signal into the SDI-1 input terminal.
2. Set CH 09.
3. Connect the oscilloscope to TP201 of the BD board.
4. Adjust the Y LEVEL data so that the Y OUT signal level A of TP201 satisfies the specification.



Specification A = 660 ± 10 mV

Fig 5-14

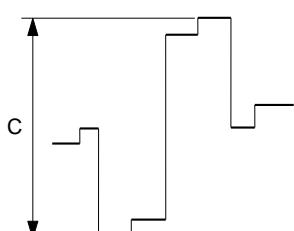
5. Connect the oscilloscope to TP501 of the BD board.
6. Adjust the PB LEVEL data so that the PB OUT signal level B of TP501 satisfies the specification.



Specification B = 660 ± 10 mV

Fig. 5-15.

7. Connect the oscilloscope to TP601 of the BD board.
8. Adjust the PR LEVEL data so that the PR OUT signal level C of TP601 satisfies the specification.



Specification C = 660 ± 10 mV

Fig. 5-16.

Section 4

Circuit Descriptions

4-1. Serial Digital Signal System

4-1-1. Input Circuit

First, channel A is explained as an example. The serial data signal input to the digital input pin is input to the SDI decoder (IC101) and the serial data is converted to the 10-bit parallel data. The DACLK free-running frequency (TP301) of the SDI decoder is set by the DA-FV voltage. The 10-bit parallel data is level-shifted to 5 V system by IC95 and IC96, and output to the decoder circuit.

4-1-2. Decoder Circuit

The signal path differs according to the signal format.

• In case of the D1 signal

The 10-bit parallel signal that is output from IC95 to IC100, is decoded to the Y signal, B-Y signal, and R-Y signal by IC115. These three signals are output from IC115 as sequential signals and consequently latched and separated by IC312, IC313, and IC314, respectively. The separated Y signal is input directly into IC318 (Y signal delay). The B-Y and R-Y signals are passed through IC361 and IC360 respectively, and input to IC319 (B-Y signal delay) and IC320 (R-Y signal delay). The delay amount of the Y signal is set by the 5-bit signals (YB0 to YB2, YW0, and YW1). The delay amount of the B-Y signal is set by the 3-bit signals (BB0 to BB2). The delay amount of the R-Y signal is set by the 2-bit signals (RB0 and RB1). The three signals of the delay circuit output are input to the D/A converter (IC370) and converted to the analog signal.

• In case of the D2 NTSC signal

The 10-bit parallel signals output from IC95 to IC100 are separated from its audio signal by IC120 to become the digital composite video signal. This signal is D/A converted by IC128 to become the INT V signal. This signal is level-adjusted by IC300. It is also bandwidth-limited by LPF (FL301) and the sync-tip clamped to 2 V by Q322 to Q324. At that time, the 100 IRE level corresponds to approximately 3.5 V. This signal is input to the A/D converter (IC341), converted to the 10-bit parallel data (B-Y sampling phase), Y/C separated, and input to the decoder circuit (IC303 to IC306 and IC309).

The 10-bit parallel signals are passed through IC303 and IC304 to become the 1H delay signal. It is then passed through IC305 and IC306 to become the 2H delay signal. These 1H delay signal, 2H delay signal, and no-delay signal (0H signal) are input to IC309, Y/C separated in the Y/C separated filter inside IC309 to become the Y signal and chroma signal. The Y signal is output as it is, while the chroma signal is decoded to the B-Y signal and R-Y signal to output.

The Y signal output from IC309 is input to IC318 (Y signal delay) directly. The B-Y and R-Y signals are passed through IC361 and IC360 respectively and input to IC319 (B-Y signal delay) and IC320 (R-Y signal delay). The three signals which pass through the delay circuit are input to the D/A converter (IC370), and converted to analog signals (Y signal, B-Y signal, and R-Y signal).

• In case of the D2 PAL signal

The 10-bit parallel signal output from IC95 to IC100 is separated from its audio signal by IC120 to become the digital composite video signal. This signal is D/A converted by IC128 to become the INT V signal, level-adjusted by IC300, bandwidth-limited by LPF (FL301), and the sync-tip clamped to 2 V by Q322 to Q324. At that time, the 100 IRE level corresponds to approximately 3.5 V. This signal is input to the A/D converter (IC341), converted to the 10-bit parallel data (B-Y sampling phase), Y/C separated, and input to the decoder circuit (IC303 to IC306, and IC309). The 10-bit parallel signal is passed through IC303 and IC304 to become 2H delay signal. It is then passed through IC305 and IC306 to become the 4H delay signal. These 2H delay signal, 4H delay signal, and no-delay signal (0H signal) are input to IC309, Y/C separated in the Y/C separated filter inside IC309 to become the Y signal and chroma signal. The Y signal is output as it is, while the chroma signal is decoded to the R-Y and B-Y signals to output.

The Y signal output from IC309 is input to IC318 (Y signal delay) directly. The B-Y and R-Y signals are passed through the PAL-S process circuit (IC361 and IC360) in the PAL-S mode, or through the PAL-D process circuit (IC903, IC904, and IC908 to IC919) in the PAL-D mode, and input to IC319 (B-Y signal delay) and IC320 (R-Y signal delay). The three signals which pass through the delay circuit are input to the D/A converter (IC370), and converted to the analog signals (Y signal, B-Y signal, and R-Y signal).

4-1-3. Low Pass Filter, Amplifier Circuit

4-1-3-1. Y signal

The Y signal output from the D/A converter (IC370) is bandwidth-limited by the LPF (FL701), passed through the amplifier circuit (Q712 and 737), switching circuit (Q738, 739, 760, 761), and output to the aperture compensation circuit (Q408, IC501) of the analog signal system.

4-1-3-2. B-Y Signal, R-Y Signal

The B-Y signal that is output from the D/A converter (IC370) is bandwidth-limited by LPF (FL703) passed through the amplifier circuit (Q719 and Q720) and switching circuit (Q721 to Q724), and finally output to the level adjustment circuit (IC601) of the analog signal system. This is the same for the R-Y signal.

4-1-4. EXTERNAL-DIGITAL Input Circuit

The BKM-21D is able to carry out external parallel digital input via the BKM-20D and BKM-22X. External digital signals are input to the bi-directional buffers (IC125 and IC126) via FB110 to FB120 from CN3. The signal output from this IC is interrupted into the IC95 to IC100 output bus lines, and input to IC115 or IC120.

4-1-5. DIGITAL FORMAT Detection Circuit

Pin ② (SYNC terminal) of the SDI decoder (IC101, IC104, and IC106) outputs the pulse that inverts its signal phase whenever it detects the TRS (Timing Reference Signal) in the input data when it receives the correct signal. This pulse is input to the monostable multivibrator (IC50) and fixed at level "H" with the 10 μ sec time constant. When reception errors occur, PIN ② (SYNC terminal) of the SDI decoder ((IC101, IC104, and IC106) does not output any pulse. For this reason, the output of the monostable multivibrator (IC50) is fixed at level "L". This discrimination signal is sent to the CPU (IC802).

4-1-6. D2 D/A Video Signal Output Circuit

In this system, the analog signal is output to another decoder board via video bus line after implementing D/A conversion by IC128. In this case, the INT-V OUT signal goes "Low" and Q414 turns ON. The INT V signal of the D/A converter output passes through IC300, FL301, Q440, Q441, Q444, and Q446, and is adjusted of its level by IC401, and is output via Q413 and Q415.

4-2. Analog Signal System

4-2-1. Input Switching Circuit, Aperture Compensation Circuit, Output Circuit

4-2-1-1. Composite Video Signal Input Switching Circuit (Q401 to 403, 433, 501 to 503, 522, 601 to 603, 624)

When channel A is selected, the $\overline{V-A}$ signal becomes "L", Q402 turns ON, and the composite video signal is passed through the buffer amplifier (Q403) and output to the A/D converter circuit. This is the same when other channels (channels B, C) are selected.

However, in the bypass mode, the signal is not passed through the Y/C separation circuit, but input to the aperture compensation circuit directly.

4-2-1-2. Y/R-Y/B-Y Signal Input Circuit (Q401, 420, 421, 434, 501, 520, 521, 523, 601, 625, 640, 641)

The \overline{YPBPR} signal becomes "L". The Y signal is passed through Q401, 434, 420, and 421, and output to the aperture circuit. The B-Y signal is passed through Q501, 523, 520, and 521, and output to the B-Y signal delay. This is the same for the R-Y signal.

4-2-1-3. R/G/B Signal Input Circuit (Q401, 501, 601, 605 to 607, 611 to 614)

The \overline{RGB} signal becomes "L". The G signal is passed through Q401, 605, and 607, and output to the level adjustment circuit. This is the same for the B and R signals.

4-2-1-4. Aperture Compensation Circuit (IC501, Q408, 409, 505 to 509, 512 to 514)

The aperture compensation signal is made by the two delay lines (DL501, 502). This compensation signal is level-adjusted by IC501, and mixed with the Y signal. The aperture compensation amount is controlled by the APT voltage. The aperture-compensated Y signal is passed through the switching circuit (Q512 to 514), and output to the level adjustment circuit. The APT voltage is output from the D/A converter (IC805) of the control circuit.

4-2-1-5. R-Y/B-Y Signal Delay Circuit (Q404, 418, 419, 422 to 425, 450)

In the case of the Y, R-Y, and B-Y signals input, the Y signal is delayed by the aperture compensation circuit and the R-Y and B-Y signals are delayed by DL402 and DL403.

4-2-1-6. Level Adjustment Circuit, Output Circuit (IC401, 502, 601, 602, Q413 to 415, 515 to 517, 615, 616, 619 to 623)

The Y/G signal is explained.

When signals other than the RGB signal is input, the Y signal from the Y signal delay circuit is input to Pin ① of IC502, level-adjusted by IC502, and output to Pin ⑤. It is then passed through the switching circuit (Q515 to 518) and output from Pin ⑪ of CN2. The gain of IC502 is controlled by the Y LEVEL voltage input to pin ③. The switching circuit (Q515 to 518) is controlled by the OE signal.

When the RGB signal is input, the G signal from the RGB signal switch (Q606, 607) is input to Pin ① of IC502. Hereafter, it is the same as the Y signal.

4-2-1-7. Composite Video I/O Circuit

This system is capable of transmitting and receiving the composite video signal with other decoder boards using the video bus line.

When the signal input from the BNC terminal of BKM-21D is sent to other decoder boards, the INT-V OUT signal becomes L and Q414 turns ON. The composite video signal is level-adjusted by IC401, and output via Q413 and Q415.

When the composite video signal is received from other decoder boards, the EXT-V OUT signal becomes L, Q411 turns ON, and the composite signal is output to the A/D conversion circuit via Q410 and Q412.

4-3. A/D Conversion Circuit (IC300, IC341)

The composite video signal is level-adjusted by IC300, bandwidth-limited by the LPF (FL301), sync-clamped to 2 V by Q322 to 324. The 100 IRE level is about 3.5 V at that time. This signal is input to the A/D converter (IC341) and converted to the 10-bit parallel data. Hereafter, the same signal processing as the D2 NTSC or D2 PAL signal is performed.

4-4. Timing Pulse Generation Circuit

4-4-1. Sync Separation Circuit (IC308)

The sync signal is separated from the INT V signal to generate the COMP SYNC signal (CLP signal), VD signal (V SYNC signal), and HD signal (AFC pulse). The frequency of the HD signal is stabilized in the AFC circuit.

4-4-2. B.G.P Generation (IC310, 321)

The HD signal is delayed by the monostable multivibrator to generate the B.G.P. (burst gate pulse). The delay amount is set by the BGP-P voltage and the pulse width is set by the BGP-W voltage.

4-4-3. C.CL.P Generation/D1 HSYNC Delay Circuit (IC322, 352, 376)

In the D1 mode, the D1 HSYNC from the D1 decoder (IC115, 117) is delayed by the monostable multivibrator (IC376) to generate the delayed H sync. The delayed amount is set by the CCP-P voltage.

In the other modes, the HD signal from the sync separation circuit (IC308) is delayed by the monostable multivibrator to generate the CCP.

4-4-4. HBLK Pulse Generation (IC311, 322)

The HD signal is delayed by the monostable multivibrator to generate the HBLK (horizontal blanking) pulse. The pulse width is set by the HBLK-W voltage.

4-4-5. KILLER Detection (IC325, 327, 326)

The voltage of the chroma burst period of the demodulated B-Y signal (APC PB signal) is sampled by IC327 (3/3) and held. This voltage is compared with the reference voltage (KILLER-LEVEL voltage) in IC326 (2/2) to discriminate between color and black/white.

4-4-6. APC Circuit (IC332 to 338)

In the NTSC mode, the voltage of the chroma burst period of the demodulated R-Y signal (APC PR signal) is sampled by IC336 (2/3) and held by IC334. This voltage is compared with the reference voltage at IC335 (1/2) and VCO (IC338, X301, 302, D302) is controlled by the error voltage so that the voltage of the chroma burst period of the R-Y signal coincides with the reference voltage. The reference voltage is set by the PHASE voltage.

In the PAL mode, the polarity of the R-Y signal is inverted every 1H, and consequently, the polarity of the APC error line sampling hold circuit (IC336 (2/3), 334) and inversion line sampling hold circuit (IC336 (3/3), 333 (2/2)) are provided separately.

4-5. Control Circuit

The CPU (IC802) performs serial communication with the main system controller by the three signals-MISO, MOSI, SCLK. It outputs the control signal for switching, etc. according to the instructions from the system controller. Some control signals are output from the extension port (IC807 to 809). The CPU also reads the adjustment data of the EEPROM (IC803) and outputs the adjustment data from the D/A converter (IC805, 806, 820). The CPU also transmits the color and black/white discrimination data (KILLER) of the input signals to the system controller.

Section 5

Semiconductors

74VHC00SJ(X)

74VHC04SJ

TC74VHC00F(EL)

TC74VHC02F (EL)

TC74VHC02F(EL)

TC74VHC04F(EL)

TC74VHC08F

TC74VHC08F(EL)

TC74VHC125F(EL)

TC74VHC125FT(EL)

TC74VHC86F

TC74VHC86F(EL)

14pin SOP

74VHC574MTCX

MB88346BPFV

MB88346BPFV-EF

TC74VHC245F

TC74VHC245F(EL)

TC74VHC574F(EL)

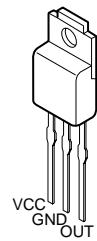
TC74VHCT245AFT(EL)

20pin SOP

BA033FP

BA033FP-E2

BA05T



BA7046F

BA7046F-T1

CXA1521M

CXA1521M-T4

LM393PS

LM393PS-E20

NJM082M

NJM4558M-TE2

TC4W53FU

TC4W53FU(TE12R)

TC7WU04FU(TE12R)

TL082CPS-E20

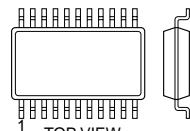
TL431CPS

TL431CPSR

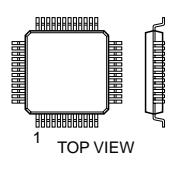
UPC4558G2

X25040S-C7000

X25040SI

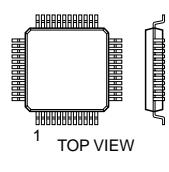


CXB1342R

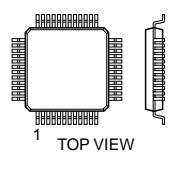


CXD1177Q

CXD1177Q-T4

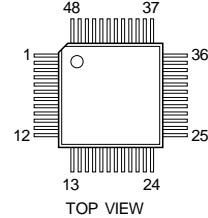


CXD2309Q-T6

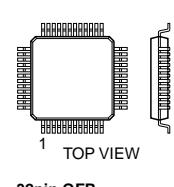


CXD2310AR

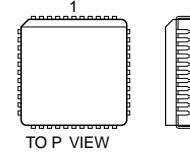
CXD2310AR-T4



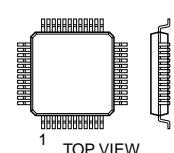
CXD2315Q



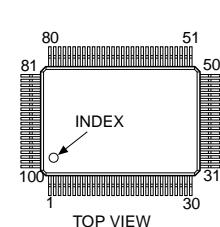
CXD8129K



CXD8161AQ

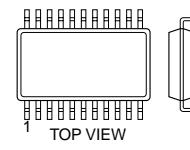


CXD8386AQ



CXK1203AR

CXK1203AR-T4

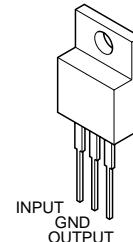


IDT74FCT821ASO

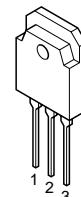


LM2940CT-5.0

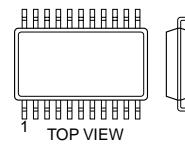
UPC2405AHF



LM2990T-5.0

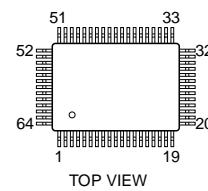


M62381FP-E2

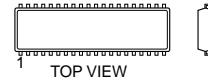


MB89613R-438

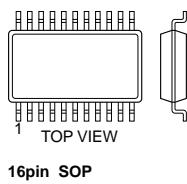
MB89613R-560



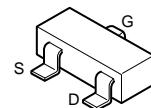
MC74HC4052AFEL



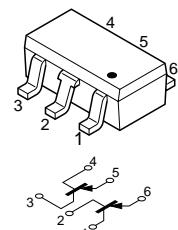
MC74HC4053F
TC74AC283F
TC74AC283F(EL)
TC74HC4053AF(EL)
TC74HC4538AF
TC74HC4538AF(EL)
TC74VHC123AF(EL)
TC74VHC175F
TC74VHC175F(EL)
TC74VHC368F(EL)
TC74VHC4040F(EL)
TC74VHC595F(EL)



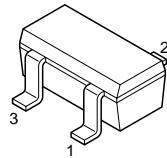
2SK160-K5
2SK160-T1K4K5K6



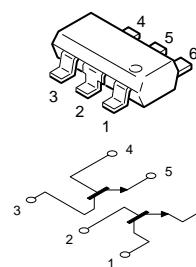
IMT2
IMT2-T109



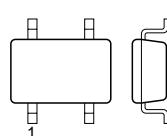
PST529CMT
PST529CMT-T1



IMX2
IMX2-T109

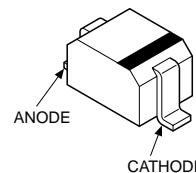


TC7S00FU(TE85R)
TC7S00FU-TE85R
TC7S08FU(TE85R)
TC7S08FU-TE85R
TC7S32FU(TE85R)
TC7S32FU-TE85R

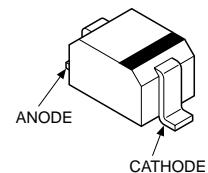
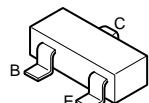


5pin CHIP

1SS352
1SS352-TPH3
1T363(VARI-CAP)
1T363A-M20-T8A
RD5.6SB
RD5.6SB-T1



2SA1037AK-T146-QR
2SA1037AK-T146-R
2SA1462
2SA1462-T1Y33Y34
2SC1623-L5L6
2SC2351-R2
2SC2351-T1R2
2SC2412K-T-146-QR
2SC3545
2SC3545-T1T43T44
DTA144EKA-T146
DTC144EKA
DTC144EKA-T146



Section 6

Spare Parts

6-1. Notes on Repair Parts

1. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.

Parts List has the present standardized repair parts.

2. Stock of Parts

Parts marked with “o” at SP (Supply Code) column of the Spare Parts list may not be stocked. Therefore, the delivery date will be delayed.

3. Units for Capacitors, Inductors and Resistors

The following units are assumed in Schematic Diagrams, Electrical Parts List and Exploded Views unless otherwise specified.

Capacitors : μF

Inductors : μH

Resistors : Ω

1. 部品の共通化

ソニーから供給する補修用部品は、セットに使われているものと異なることがあります。

これは部品の共通化、改良等によるものです。

部品表には現時点での共通化された補修用部品が記載されています。

2. 部品の在庫

部品表のSP (Supply code) 欄に “o” で示される部品は在庫していないことがあります、納期が長くなることがあります。

分解図中の構成部品で、Ref. No.のない部品は供給しません。

3. コンデンサ、インダクタ、抵抗の単位

回路図、分解図、電気部品表中、特に明記したもの除き、下記の単位は省略されています。

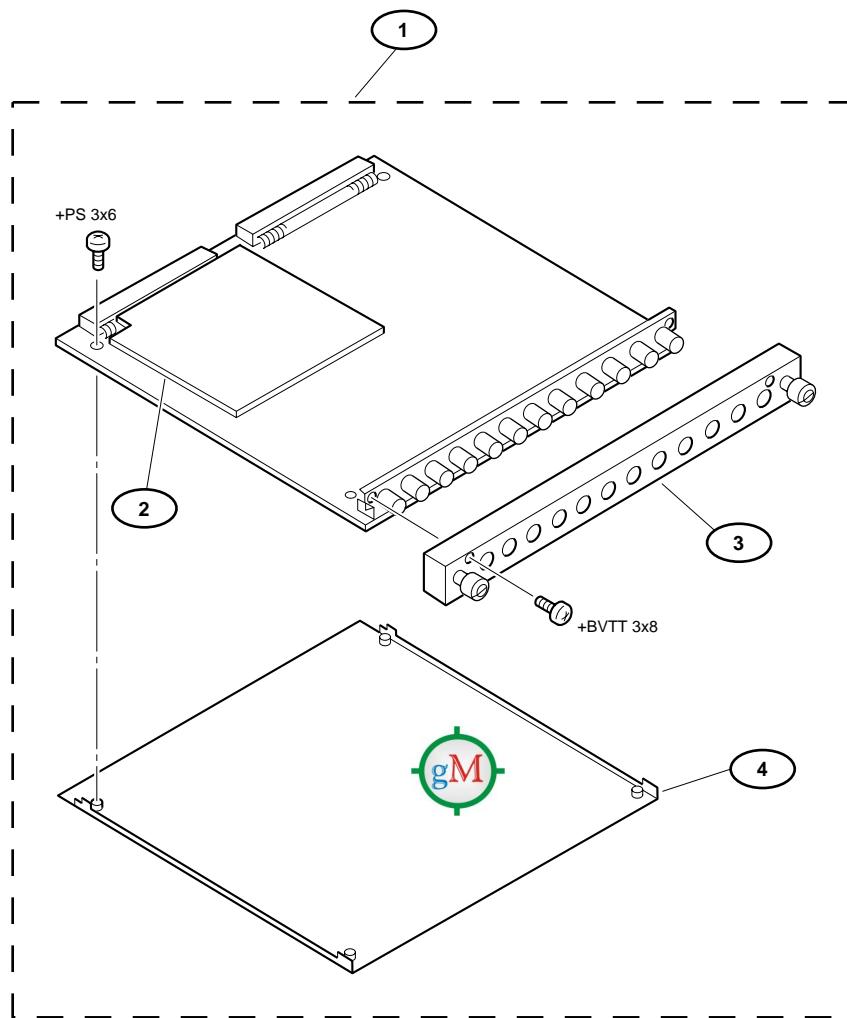
コンデンサ : μF

インダクタ : μH

抵抗 : Ω

Exploded Views

6-2. Exploded Views



No. Part No. SP Description

1	A-1136-211-A	s MOUNTED CIRCUIT BOARD, BD
2	A-1131-734-A	s MOUNTED CIRCUIT BOARD, BD2
3	X-4033-142-4	o PANEL ASSY, CONNECTOR
4	4-057-770-01	o INSULATOR

Screws/Washers

7-682-647-09 s SCREW +PS 3X6
7-685-872-09 s SCREW +BVTT 3X8 (S)

6-3. Electrical Parts List

BD BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-1136-211-A	s MOUNTED CIRCUIT BOARD, BD (INCLUDING BD2 BOARD)
2pcs	3-741-396-01	s INSULATOR (GLASS)
1pc	4-053-232-01	s FINGER, SHIELD
1pc	4-057-770-01	o INSULATOR
4pcs	7-682-647-09	s SCREW +PS 3X6
2pcs	7-685-872-09	s SCREW +BVTT 3X8 (S)
C6	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C11	1-126-396-11	s CAPACITOR, ELECT 47MF/16V(CHIP)
C12	1-126-396-11	s CAPACITOR, ELECT 47MF/16V(CHIP)
C37	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C38	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C40	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C41	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C45	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C46	1-128-526-11	s CAPACITOR, ELECT 100MF/25V
C48	1-164-346-11	s CAPACITOR CHIP CERAMIC 1MF/16V
C49	1-164-346-11	s CAPACITOR CHIP CERAMIC 1MF/16V
C50	1-163-257-11	s CAPACITOR CERAMIC 180PF/50V
C51	1-163-239-11	s CAPACITOR,CHIP CERAMIC 33PF/50V
C52	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C53	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C54	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C55	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C56	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C57	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C58	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C59	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C60	1-126-392-11	s CAPACITOR,CHIP ELECT100MF/6.3V
C68	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C69	1-164-346-11	s CAPACITOR CHIP CERAMIC 1MF/16V
C70	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C71	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C72	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C73	1-164-346-11	s CAPACITOR CHIP CERAMIC 1MF/16V
C74	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C77	1-104-652-11	s CAPACITOR, ELECT 470MF/10V(105)
C90	1-109-982-11	s CAPACITOR,CHIP CERAMIC 1MF/10V
C91	1-104-652-11	s CAPACITOR, ELECT 470MF/10V(105)
C92	1-164-346-11	s CAPACITOR CHIP CERAMIC 1MF/16V
C93	1-164-346-11	s CAPACITOR CHIP CERAMIC 1MF/16V
C94	1-104-652-11	s CAPACITOR, ELECT 470MF/10V(105)
C95	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C96	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C97	1-104-652-11	s CAPACITOR, ELECT 470MF/10V(105)
C98	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C99	1-104-652-11	s CAPACITOR, ELECT 470MF/10V(105)
C101	1-163-243-11	s CAPACITOR CHIP CERAMIC 47PF/50
C102	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C103	1-117-370-11	s CAPASITER CERAMIC 10MF (3216)
C104	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C105	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C107	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C108	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C109	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C112	1-126-394-11	s CAPACITOR, ELECT 10MF/16V(CHIP)
C113	1-126-394-11	s CAPACITOR, ELECT 10MF/16V(CHIP)
C115	1-126-392-11	s CAPACITOR,CHIP ELECT100MF/6.3V

(BD BOARD)

Ref. No. or Q'ty	Part No.	SP Description
C117	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C118	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C119	1-163-243-11	s CAPACITOR CHIP CERAMIC 47PF/50
C120	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C121	1-109-982-11	s CAPACITOR,CHIP CERAMIC 1MF/10V
C122	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C123	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C124	1-117-370-11	s CAPASITER CERAMIC 10MF (3216)
C125	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C127	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C128	1-163-227-11	s CAPACITOR CERAMIC 10PF/50V(CH)
C129	1-109-982-11	s CAPACITOR,CHIP CERAMIC 1MF/10V
C130	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C131	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C132	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C133	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C134	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C135	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C136	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C137	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C138	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C139	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C140	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C141	1-163-227-11	s CAPACITOR CERAMIC 10PF/50V(CH)
C142	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C146	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C147	1-163-141-00	s CAPACITOR,CHIP CERAMIC 1000PF
C148	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C149	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C150	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C151	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C152	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C153	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C154	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C155	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C156	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C157	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C158	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C159	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C160	1-126-390-11	s CAPACITOR ELECT 22MF/6.3V(105)
C161	1-126-390-11	s CAPACITOR ELECT 22MF/6.3V(105)
C162	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C163	1-164-346-11	s CAPACITOR CHIP CERAMIC 1MF/16V
C164	1-164-346-11	s CAPACITOR CHIP CERAMIC 1MF/16V
C165	1-164-346-11	s CAPACITOR CHIP CERAMIC 1MF/16V
C166	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C167	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C168	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C169	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C170	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C171	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C172	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C173	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C174	1-126-390-11	s CAPACITOR ELECT 22MF/6.3V(105)
C175	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C176	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C177	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C178	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF
C179	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V
C180	1-163-243-11	s CAPACITOR CHIP CERAMIC 47PF/50

(BD BOARD)

Ref. No.
or Q'ty Part No. SP Description

C181 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C182 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C183 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C184 1-117-370-11 s CAPASITER CERAMIC 10MF (3216)
C185 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C186 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C187 1-163-141-00 s CAPACITOR, CHIP CERAMIC 1000PF
C188 1-163-141-00 s CAPACITOR, CHIP CERAMIC 1000PF
C189 1-163-141-00 s CAPACITOR, CHIP CERAMIC 1000PF
C190 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C191 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C192 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C193 1-163-141-00 s CAPACITOR, CHIP CERAMIC 1000PF
C195 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C199 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C200 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
C201 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C202 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
C203 1-126-205-11 s CAPACITOR, ELECT 47M/6.3
C205 1-163-227-11 s CAPACITOR CERAMIC 10PF/50V(CH)

C206 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C207 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C208 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C209 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C210 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF

C211 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C212 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C213 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C214 1-164-346-11 s CAPACITOR CHIP CERAMIC 1MF/16V
C215 1-164-346-11 s CAPACITOR CHIP CERAMIC 1MF/16V

C216 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C217 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C218 1-126-392-11 s CAPACITOR, CHIP ELECT100MF/6.3V
C219 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C220 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C221 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C222 1-128-528-11 s CAPACITOR, ELECT 470MF/25V
C223 1-164-346-11 s CAPACITOR CHIP CERAMIC 1MF/16V
C224 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C225 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C226 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C228 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C231 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C232 1-126-603-11 s CAPACITOR, ELECT 4.7MF/35V
C233 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C234 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C235 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C236 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C238 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C239 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C240 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C241 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C242 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C243 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C300 1-104-559-11 s CAPACITOR FILM 0.047MF/16V

C301 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C302 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C304 1-164-346-11 s CAPACITOR CHIP CERAMIC 1MF/16V
C305 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C306 1-128-257-21 s CAPACITOR, ELECT 33MF/10V(BP)

(BD BOARD)

Ref. No.
or Q'ty Part No. SP Description

C307 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C308 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C309 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C310 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C311 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C312 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C313 1-104-652-11 s CAPACITOR, ELECT 470MF/10V(105)
C314 1-163-141-00 s CAPACITOR, CHIP CERAMIC 1000PF
C315 1-126-401-11 s CAPACITOR, ELECT 1MF/50V(CHIP)
C316 1-163-251-11 s CAPACITOR CERAMIC 100PF/50V

C317 1-164-161-11 s CAPACITOR, CERAMIC 2200PF/100V
C318 1-126-401-11 s CAPACITOR, ELECT 1MF/50V(CHIP)
C319 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
C320 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C321 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF

C322 1-163-251-11 s CAPACITOR CERAMIC 100PF/50V
C323 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C324 1-163-251-11 s CAPACITOR CERAMIC 100PF/50V
C325 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C326 1-163-251-11 s CAPACITOR CERAMIC 100PF/50V

C327 1-163-275-11 s CAPACITOR CERAMIC 1000PF/50V
C328 1-104-551-11 s CAPACITOR FILM 0.01MF/16V 2125
C329 1-104-551-11 s CAPACITOR FILM 0.01MF/16V 2125
C330 1-128-594-11 s CAPACITOR, ELECT 1MF/50V(BP)
C331 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF

C332 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C333 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C334 1-163-275-11 s CAPACITOR CERAMIC 1000PF/50V
C335 1-104-551-11 s CAPACITOR FILM 0.01MF/16V 2125
C336 1-104-551-11 s CAPACITOR FILM 0.01MF/16V 2125

C337 1-104-559-11 s CAPACITOR FILM 0.047MF/16V
C338 1-104-563-11 s CAPACITOR, CHIP FILM 0.1MF
C339 1-104-563-11 s CAPACITOR, CHIP FILM 0.1MF
C340 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C341 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF

C342 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C343 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C344 1-163-275-11 s CAPACITOR CERAMIC 1000PF/50V
C345 1-163-089-00 s CAPACITOR, CHIP CERAMIC 6.0PF
C346 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF

C347 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C348 1-104-652-11 s CAPACITOR, ELECT 470MF/10V(105)
C349 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C350 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C354 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C355 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C356 1-163-251-11 s CAPACITOR CERAMIC 100PF/50V
C357 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C358 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C359 1-163-113-00 s CAPACITOR, CHIP CERAMIC 68PF/50

C360 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C361 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C362 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C363 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C364 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C365 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C366 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C367 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C368 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C369 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF

(BD BOARD)

Ref. No.
or Q'ty Part No. SP Description

C370 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C371 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C372 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C373 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C374 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C375 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C376 1-126-205-11 s CAPACITOR, ELECT 47M/6.3
 C377 1-126-392-11 s CAPACITOR, CHIP ELECT100MF/6.3V
 C378 1-163-141-00 s CAPACITOR, CHIP CERAMIC 1000PF
 C380 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C381 1-163-251-11 s CAPACITOR CERAMIC 100PF/50V
 C382 1-163-275-11 s CAPACITOR CERAMIC 1000PF/50V
 C384 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C385 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C386 1-126-400-11 s CAPACITOR ELECT 22MF/35V(CHIP)
 C387 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C390 1-126-205-11 s CAPACITOR, ELECT 47M/6.3
 C391 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C395 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C401 1-163-231-11 s CAPACITOR, CHIP CERAMIC15PF/50V
 C402 1-115-155-11 s CAPACITOR, ELECT 22MF/16V(BP)
 C403 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C404 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C405 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C406 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C407 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C411 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C417 1-163-035-00 s CAPACITOR, CHIP CERAMIC 0.047MF
 C420 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C421 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C422 1-110-666-11 s CAPACITOR, ELECT 22MF/6.3V(BP)
 C425 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C450 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C451 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C452 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C453 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C454 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C455 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C456 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C457 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C458 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C471 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C472 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C473 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C474 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C475 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C476 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C480 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C482 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C483 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C484 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C485 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C486 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C487 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C489 1-104-652-11 s CAPACITOR, ELECT 470MF/10V(105)
 C490 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C491 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C492 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C493 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C494 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF

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Ref. No.
or Q'ty Part No. SP Description

C495 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C497 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C498 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C499 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C501 1-163-231-11 s CAPACITOR, CHIP CERAMIC15PF/50V
 C502 1-115-155-11 s CAPACITOR, ELECT 22MF/16V(BP)
 C505 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C506 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C507 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C509 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C510 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C511 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C512 1-110-666-11 s CAPACITOR, ELECT 22MF/6.3V(BP)
 C514 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C515 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C517 1-163-035-00 s CAPACITOR, CHIP CERAMIC 0.047MF
 C582 1-164-346-11 s CAPACITOR CHIP CERAMIC 1MF/16V
 C583 1-104-652-11 s CAPACITOR, ELECT 470MF/10V(105)
 C586 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C598 1-164-346-11 s CAPACITOR CHIP CERAMIC 1MF/16V
 C601 1-163-231-11 s CAPACITOR, CHIP CERAMIC15PF/50V
 C602 1-115-155-11 s CAPACITOR, ELECT 22MF/16V(BP)
 C603 1-164-346-11 s CAPACITOR CHIP CERAMIC 1MF/16V
 C605 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C606 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C607 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C608 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C609 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C610 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C617 1-163-035-00 s CAPACITOR, CHIP CERAMIC 0.047MF
 C620 1-110-666-11 s CAPACITOR, ELECT 22MF/6.3V(BP)
 C621 1-110-666-11 s CAPACITOR, ELECT 22MF/6.3V(BP)
 C666 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C667 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C668 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C672 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C673 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C674 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C675 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C676 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C680 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C681 1-126-391-11 s CAPACITOR ELECT 47MF/6.3V(105)
 C684 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C685 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C701 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C702 1-163-237-11 s CAPACITOR CERAMIC 27PF/50V
 C710 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C711 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
 C750 1-163-227-11 s CAPACITOR CERAMIC 10PF/50V(CH)
 C751 1-163-237-11 s CAPACITOR CERAMIC 27PF/50V
 C770 1-163-251-11 s CAPACITOR CERAMIC 100PF/50V
 C771 1-126-392-11 s CAPACITOR, CHIP ELECT100MF/6.3V
 C772 1-126-392-11 s CAPACITOR, CHIP ELECT100MF/6.3V
 C773 1-126-392-11 s CAPACITOR, CHIP ELECT100MF/6.3V
 C810 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C811 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C812 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C813 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C814 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
 C815 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF

(BD BOARD)

Ref. No.
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C820 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
C830 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C831 1-163-031-11 s CAPACITOR, CHIP CERAMIC 0.01MF
C832 1-164-346-11 s CAPACITOR CHIP CERAMIC 1MF/16V
C833 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V

C890 1-163-038-00 s CAPACITOR, CERAMIC 0.1MF/25V
CN1 1-537-958-11 s TERMINAL BOARD ASSY, I/O
CN2 1-774-523-11 o PIN, CONNECTOR (PC BOARD) 64P
CN3 1-774-523-11 o PIN, CONNECTOR (PC BOARD) 64P
CN4 1-774-392-11 o CONNECTOR, BOARD TO BOARD 60P

D301 8-719-016-74 s DIODE 1SS352
D302 8-719-002-81 s DIODE 1T363 (VARI-CAP)
D303 8-719-016-74 s DIODE 1SS352
D310 8-719-016-74 s DIODE 1SS352
D402 8-719-016-74 s DIODE 1SS352

D810 8-719-158-15 s DIODE RD5.6SB
D811 8-719-016-74 s DIODE 1SS352

DL401 1-411-451-11 s DELAY LINE

DL402 1-411-452-11 s DELAY LINE

DL403 1-411-452-11 s DELAY LINE

DL501 1-411-450-11 s DELAY LINE

DL502 1-411-450-11 s DELAY LINE

FB100 1-543-309-21 s BEAD, FERRITE

FB101 1-543-309-21 s BEAD, FERRITE

FB102 1-543-309-21 s BEAD, FERRITE

FB105 1-543-309-21 s BEAD, FERRITE

FB106 1-543-309-21 s BEAD, FERRITE

FB110 1-239-719-31 s FILTER, CHIP EMI

FB111 1-239-719-31 s FILTER, CHIP EMI

FB112 1-239-719-31 s FILTER, CHIP EMI

FB113 1-239-719-31 s FILTER, CHIP EMI

FB114 1-239-719-31 s FILTER, CHIP EMI

FB115 1-239-719-31 s FILTER, CHIP EMI

FB116 1-239-719-31 s FILTER, CHIP EMI

FB117 1-239-719-31 s FILTER, CHIP EMI

FB118 1-239-719-31 s FILTER, CHIP EMI

FB119 1-239-719-31 s FILTER, CHIP EMI

FB120 1-239-719-31 s FILTER, CHIP EMI

FB130 1-543-309-21 s BEAD, FERRITE

FB131 1-543-309-21 s BEAD, FERRITE

FB150 1-543-309-21 s BEAD, FERRITE

FB151 1-543-309-21 s BEAD, FERRITE

FB152 1-543-309-21 s BEAD, FERRITE

FB161 1-543-309-21 s BEAD, FERRITE

FB162 1-543-309-21 s BEAD, FERRITE

FB163 1-543-309-21 s BEAD, FERRITE

FB164 1-543-309-21 s BEAD, FERRITE

FB165 1-543-309-21 s BEAD, FERRITE

FB166 1-543-309-21 s BEAD, FERRITE

FB180 1-239-719-31 s FILTER, CHIP EMI

FB181 1-239-719-31 s FILTER, CHIP EMI

FL301 1-233-441-11 s FILTER, LOW PASS

FL701 1-233-441-11 s FILTER, LOW PASS

FL703 1-473-351-11 s FILTER, LOW PASS

FL704 1-473-351-11 s FILTER, LOW PASS

FL802 1-239-183-11 s FILTER, EMI

FL806 1-236-071-11 s EMI FILTER

FL807 1-236-071-11 s EMI FILTER

(BD BOARD)

Ref. No.
or Q'ty Part No. SP Description

IC12 8-759-390-57 s IC UPC2405AHF
IC13 8-759-247-67 s IC LM2990T-5.0
IC50 8-759-185-75 s IC TC74VHCT123AF (EL)
IC91 8-759-460-72 s IC BA033FP
IC92 8-759-460-72 s IC BA033FP

IC93 8-759-460-72 s IC BA033FP
IC95 8-759-490-41 s IC TC74VHCT541AFT(EL)
IC96 8-759-490-41 s IC TC74VHCT541AFT(EL)
IC97 8-759-490-41 s IC TC74VHCT541AFT(EL)
IC98 8-759-490-41 s IC TC74VHCT541AFT(EL)

IC99 8-759-490-41 s IC TC74VHCT541AFT(EL)
IC100 8-759-490-41 s IC TC74VHCT541AFT(EL)
IC101 8-752-078-34 s IC CXB1342R
IC103 8-759-991-19 s IC PST529CMT
IC104 8-752-078-34 s IC CXB1342R

IC105 8-759-700-78 s IC NJM082M
IC106 8-752-078-34 s IC CXB1342R
IC108 8-759-186-84 s IC TC74VHCT86F
IC109 8-759-490-41 s IC TC74VHCT541AFT(EL)
IC112 8-759-272-27 s IC 74VHC04SJ

IC113 8-759-671-91 s IC MC74HC4052AFEL
IC115 8-759-172-72 s IC CXD8386AQ
IC116 8-759-272-11 s IC 74VHC00SJ (X)
IC117 8-759-186-26 s IC TC74VHC02F (EL)
IC118 8-759-186-84 s IC TC74VHCT86F

IC119 8-759-186-57 s IC TC74VHCT175F
IC120 8-759-500-29 s IC CXD8129K
IC121 8-759-272-27 s IC 74VHC04SJ
IC124 8-759-700-78 s IC NJM082M
IC125 8-759-985-55 s IC 74AC245SJ

IC126 8-759-985-55 s IC 74AC245SJ
IC128 8-752-375-98 s IC CXD2315Q
IC129 8-759-700-78 s IC NJM082M
IC130 8-759-186-08 s IC TC74VHC368F (EL)
IC135 8-759-671-91 s IC MC74HC4052AFEL

IC140 8-759-524-04 s IC TC74VHCT125FT (EL)
IC300 8-752-054-80 s IC CXA1521M
IC301 8-759-700-78 s IC NJM082M
IC302 8-759-700-78 s IC NJM082M
IC303 8-752-360-44 s IC CXK1203AR

IC304 8-752-360-44 s IC CXK1203AR
IC305 8-752-360-44 s IC CXK1203AR
IC306 8-752-360-44 s IC CXK1203AR
IC307 8-759-929-26 s IC TL431CPS
IC308 8-759-514-57 s IC BA7046F

IC309 8-759-513-76 s IC CXD8161AQ
IC310 8-759-239-34 s IC TC74HC4538AF
IC311 8-759-239-34 s IC TC74HC4538AF
IC312 8-759-517-93 s IC IDT74FCT821AS0
IC313 8-759-517-93 s IC IDT74FCT821AS0

IC314 8-759-517-93 s IC IDT74FCT821AS0
IC318 8-752-360-44 s IC CXK1203AR
IC319 8-752-360-44 s IC CXK1203AR
IC320 8-752-360-44 s IC CXK1203AR
IC321 8-759-100-96 s IC UPC4558G2

IC322 8-759-100-96 s IC UPC4558G2
IC324 8-759-929-26 s IC TL431CPS
IC325 8-759-700-78 s IC NJM082M
IC326 8-759-700-78 s IC NJM082M
IC327 8-759-011-65 s IC MC74HC4053F

(BD BOARD)

Ref. No.
or Q'ty Part No. SP DescriptionIC328 8-759-988-13 s IC LM393PS
IC329 8-759-272-11 s IC 74VHC00SJ (X)
IC330 8-759-081-48 s IC TC74VHC08F
IC331 8-759-272-11 s IC 74VHC00SJ (X)
IC332 8-759-700-78 s IC NJM082MIC333 8-759-700-78 s IC NJM082M
IC334 8-759-700-78 s IC NJM082M
IC335 8-759-700-78 s IC NJM082M
IC336 8-759-011-65 s IC MC74HC4053F
IC337 8-759-082-61 s IC TC4W53FUIC338 8-759-096-87 s IC TC7WU04FU (TE12R)
IC339 8-759-100-96 s IC UPC4558G2
IC340 8-759-700-78 s IC NJM082M
IC341 8-752-376-32 s IC CXD2310AR
IC342 8-759-524-04 s IC TC74VHC125FT (EL)IC343 8-759-186-24 s IC TC74VHC4040F (EL)
IC350 8-759-700-78 s IC NJM082M
IC351 8-759-082-61 s IC TC4W53FU
IC352 8-759-082-61 s IC TC4W53FU
IC360 8-759-517-93 s IC IDT74FCT821AS0IC361 8-759-517-93 s IC IDT74FCT821AS0
IC370 8-752-369-84 s IC CXD2309Q (T6)
IC371 8-759-082-61 s IC TC4W53FU
IC375 8-759-058-54 s IC TC7S00FU-TE85R
IC376 8-759-239-34 s IC TC74HC4538AFIC401 8-752-054-80 s IC CXA1521M
IC501 8-752-054-80 s IC CXA1521M
IC502 8-752-054-80 s IC CXA1521M
IC601 8-752-054-80 s IC CXA1521M
IC602 8-752-054-80 s IC CXA1521MIC703 8-759-082-61 s IC TC4W53FU
IC704 8-759-082-61 s IC TC4W53FU
IC801 8-759-524-04 s IC TC74VHC125FT (EL)
IC802 8-759-546-25 s IC MB89613R-560
IC803 8-759-156-54 s IC X25040SIIC804 8-759-524-04 s IC TC74VHC125FT (EL)
IC805 8-759-064-36 s IC MB88346BPFV
IC806 8-759-064-36 s IC MB88346BPFV
IC807 8-759-186-23 s IC TC74VHC595F(EL)
IC808 8-759-186-23 s IC TC74VHC595F(EL)IC809 8-759-186-23 s IC TC74VHC595F(EL)
IC820 8-759-281-19 IC M62381FP-E2
IC830 8-759-058-62 s IC TC7S08FU-TE85RL101 1-414-463-41 s INDUCTOR, CHIP (J) 10NH
L102 1-414-463-41 s INDUCTOR, CHIP (J) 10NH
L103 1-414-463-41 s INDUCTOR, CHIP (J) 10NH
L106 1-408-615-31 s MICRO INDUCTOR 100UH
L107 1-408-615-31 s MICRO INDUCTOR 100UHL108 1-412-529-81 s MICRO INDUCTOR 22UH
L111 1-414-468-11 s INDUCTOR, CHIP (K)(27NH)
L112 1-414-468-11 s INDUCTOR, CHIP (K)(27NH)
L113 1-414-468-11 s INDUCTOR, CHIP (K)(27NH)
L114 1-414-468-11 s INDUCTOR, CHIP (K)(27NH)L115 1-414-468-11 s INDUCTOR, CHIP (K)(27NH)
L116 1-414-468-11 s INDUCTOR, CHIP (K)(27NH)Q40 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q41 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q42 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q43 8-729-120-28 s TRANSISTOR 2SC1623-L5L6

(BD BOARD)

Ref. No.
or Q'ty Part No. SP DescriptionQ44 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q45 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q46 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q47 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q48 8-729-027-38 s TRANSISTOR DTA144EKA-T146Q49 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q50 8-729-101-11 s TRANSISTOR 2SC2351-R2
Q51 8-729-101-11 s TRANSISTOR 2SC2351-R2
Q52 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q53 8-729-101-11 s TRANSISTOR 2SC2351-R2Q54 8-729-101-11 s TRANSISTOR 2SC2351-R2
Q55 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q57 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q58 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q63 1-801-806-11 s TRANSISTOR DTC144EKAQ64 1-801-806-11 s TRANSISTOR DTC144EKA
Q65 1-801-806-11 s TRANSISTOR DTC144EKA
Q75 1-801-806-11 s TRANSISTOR DTC144EKA
Q76 1-801-806-11 s TRANSISTOR DTC144EKA
Q77 1-801-806-11 s TRANSISTOR DTC144EKAQ104 8-729-101-11 s TRANSISTOR 2SC2351-R2
Q105 8-729-101-11 s TRANSISTOR 2SC2351-R2
Q106 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q107 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q108 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-RQ109 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q114 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q129 1-801-806-11 s TRANSISTOR DTC144EKA
Q132 1-801-806-11 s TRANSISTOR DTC144EKA
Q133 1-801-806-11 s TRANSISTOR DTC144EKAQ150 1-801-806-11 s TRANSISTOR DTC144EKA
Q151 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q152 1-801-806-11 s TRANSISTOR DTC144EKA
Q153 1-801-806-11 s TRANSISTOR DTC144EKA
Q301 8-729-027-38 s TRANSISTOR DTA144EKA-T146Q302 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q303 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q305 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q306 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q307 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-RQ308 1-801-806-11 s TRANSISTOR DTC144EKA
Q309 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q310 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q311 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q312 8-729-027-38 s TRANSISTOR DTA144EKA-T146Q313 1-801-806-11 s TRANSISTOR DTC144EKA
Q316 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q317 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q318 8-729-116-05 s TRANSISTOR 2SK160-K5
Q319 8-729-116-05 s TRANSISTOR 2SK160-K5Q320 1-801-806-11 s TRANSISTOR DTC144EKA
Q322 8-729-112-65 s TRANSISTOR 2SA1462
Q323 8-729-107-31 s TRANSISTOR 2SC3545
Q324 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q330 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-RQ331 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q332 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q338 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q350 8-729-027-38 s TRANSISTOR DTA144EKA-T146

(BD BOARD)

Ref. No.
or Q'ty Part No. SP Description

Q370 1-801-806-11 s TRANSISTOR DTC144EKA
Q371 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q401 8-729-112-65 s TRANSISTOR 2SA1462
Q402 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q403 8-729-920-59 s TRANSISTOR IMX2

Q404 8-729-925-42 s TRANSISTOR IMT2
Q405 8-729-925-42 s TRANSISTOR IMT2
Q406 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q407 8-729-920-59 s TRANSISTOR IMX2
Q408 8-729-120-28 s TRANSISTOR 2SC1623-L5L6

Q409 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q410 8-729-925-42 s TRANSISTOR IMT2
Q411 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q412 8-729-920-59 s TRANSISTOR IMX2
Q413 8-729-925-42 s TRANSISTOR IMT2

Q414 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q415 8-729-920-59 s TRANSISTOR IMX2
Q418 8-729-112-65 s TRANSISTOR 2SA1462
Q419 8-729-107-31 s TRANSISTOR 2SC3545
Q420 8-729-120-28 s TRANSISTOR 2SC1623-L5L6

Q421 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q422 8-729-112-65 s TRANSISTOR 2SA1462
Q423 8-729-107-31 s TRANSISTOR 2SC3545
Q424 8-729-925-42 s TRANSISTOR IMT2
Q425 8-729-920-59 s TRANSISTOR IMX2

Q432 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q433 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q434 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q440 8-729-107-31 s TRANSISTOR 2SC3545
Q441 8-729-112-65 s TRANSISTOR 2SA1462

Q443 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q444 8-729-925-42 s TRANSISTOR IMT2
Q446 8-729-920-59 s TRANSISTOR IMX2
Q450 8-729-920-59 s TRANSISTOR IMX2
Q451 8-729-027-38 s TRANSISTOR DTA144EKA-T146

Q452 8-729-925-42 s TRANSISTOR IMT2
Q454 8-729-920-59 s TRANSISTOR IMX2
Q501 8-729-112-65 s TRANSISTOR 2SA1462
Q502 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q503 8-729-920-59 s TRANSISTOR IMX2

Q505 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q506 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q507 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q508 8-729-112-65 s TRANSISTOR 2SA1462
Q509 8-729-107-31 s TRANSISTOR 2SC3545

Q512 8-729-925-42 s TRANSISTOR IMT2
Q513 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q514 8-729-920-59 s TRANSISTOR IMX2
Q515 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q516 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R

Q517 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q518 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q520 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q521 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q522 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R

Q523 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q601 8-729-112-65 s TRANSISTOR 2SA1462
Q602 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q603 8-729-920-59 s TRANSISTOR IMX2

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Q605 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q606 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q607 8-729-920-59 s TRANSISTOR IMX2
Q611 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q612 8-729-920-59 s TRANSISTOR IMX2

Q613 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q614 8-729-920-59 s TRANSISTOR IMX2
Q615 8-729-925-42 s TRANSISTOR IMT2
Q616 8-729-920-59 s TRANSISTOR IMX2
Q619 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R

Q620 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q621 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q622 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q623 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q624 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R

Q625 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q640 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q641 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q701 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q702 8-729-120-28 s TRANSISTOR 2SC1623-L5L6

Q704 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q705 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q707 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q708 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q709 8-729-120-28 s TRANSISTOR 2SC1623-L5L6

Q711 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q712 8-729-112-65 s TRANSISTOR 2SA1462
Q713 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q718 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q719 8-729-112-65 s TRANSISTOR 2SA1462

Q720 8-729-107-31 s TRANSISTOR 2SC3545
Q721 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q722 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q723 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q724 8-729-120-28 s TRANSISTOR 2SC1623-L5L6

Q728 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q730 8-729-112-65 s TRANSISTOR 2SA1462
Q731 8-729-107-31 s TRANSISTOR 2SC3545
Q732 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q737 8-729-107-31 s TRANSISTOR 2SC3545

Q738 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q739 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q740 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q760 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q761 8-729-120-28 s TRANSISTOR 2SC1623-L5L6

Q762 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q763 8-729-120-28 s TRANSISTOR 2SC1623-L5L6
Q764 8-729-026-49 s TRANSISTOR 2SA1037AK-T146-R
Q801 1-801-806-11 s TRANSISTOR DTC144EKA
Q802 1-801-806-11 s TRANSISTOR DTC144EKA

Q803 1-801-806-11 s TRANSISTOR DTC144EKA
Q810 8-729-027-38 s TRANSISTOR DTA144EKA-T146
Q811 8-729-920-59 s TRANSISTOR IMX2
Q812 8-729-920-59 s TRANSISTOR IMX2

R70 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
R71 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
R72 1-216-636-11 s RESISTOR CHIP 240 1/10W (2012)
R73 1-216-636-11 s RESISTOR CHIP 240 1/10W (2012)
R74 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)

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R75	1-216-025-00	s RESISTOR,CHIP 100 1/10W(2012)
R76	1-216-019-00	s RESISTOR,CHIP 56 1/10W(2012)
R80	1-216-295-00	s CONDUCTOR, CHIP (2012)
R85	1-216-634-11	s RESISTOR,CHIP 200 1/10W(2012)
R86	1-216-675-11	s RESISTOR,CHIP 10K 1/10W(2012)
R87	1-216-667-11	s RESISTOR,CHIP 4.7K 1/10W(2012)
R88	1-216-065-91	s RESISTOR,CHIP 4.7K 1/10W(2012)
R89	1-216-097-00	s RESISTOR CHIP 100K 1/10W(2012)
R90	1-216-081-00	s RESISTOR,CHIP 22K 1/10W(2012)
R91	1-216-089-00	s RESISTOR CHIP 47K 1/10W(2012)
R92	1-216-065-91	s RESISTOR,CHIP 4.7K 1/10W(2012)
R93	1-216-065-91	s RESISTOR,CHIP 4.7K 1/10W(2012)
R94	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R95	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R96	1-216-625-11	s RESISTOR,CHIP 82 1/10W
R97	1-216-091-00	s RESISTOR CHIP 56K 1/10W(2012)
R98	1-216-065-91	s RESISTOR,CHIP 4.7K 1/10W(2012)
R100	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R101	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R102	1-216-101-00	s RESISTOR CHIP 150K 1/10W(2012)
R103	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R104	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R105	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R106	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R107	1-216-075-00	s RESISTOR CHIP 12K 1/10W(2012)
R108	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R109	1-216-041-00	s RESISTOR, CHIP 470 1/10W(2012)
R110	1-216-059-00	s RESISTOR,CHIP 2.7K 1/10W(2012)
R111	1-216-059-00	s RESISTOR,CHIP 2.7K 1/10W(2012)
R112	1-216-669-11	s RESISTOR,CHIP 5.6K 1/10W(2012)
R113	1-216-661-11	s RESISTOR,CHIP 2.7K 1/10W(2012)
R114	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R115	1-216-625-11	s RESISTOR,CHIP 82 1/10W
R116	1-216-625-11	s RESISTOR,CHIP 82 1/10W
R117	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R118	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R119	1-216-611-11	s RESISTOR,CHIP 22 1/10W (2012)
R120	1-216-611-11	s RESISTOR,CHIP 22 1/10W (2012)
R121	1-216-613-11	s RESISTOR,CHIP 27 1/10W(2012)
R122	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R123	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R124	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R125	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R126	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R127	1-216-075-00	s RESISTOR CHIP 12K 1/10W(2012)
R128	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R129	1-216-059-00	s RESISTOR,CHIP 2.7K 1/10W(2012)
R130	1-216-059-00	s RESISTOR,CHIP 2.7K 1/10W(2012)
R131	1-216-041-00	s RESISTOR, CHIP 470 1/10W(2012)
R132	1-216-093-00	s RESISTOR, CHIP 68K 1/10W(2012)
R133	1-216-663-11	s RESISTOR,CHIP 3.3K 1/10W(2012)
R143	1-216-059-00	s RESISTOR,CHIP 2.7K 1/10W(2012)
R144	1-216-059-00	s RESISTOR,CHIP 2.7K 1/10W(2012)
R145	1-216-041-00	s RESISTOR, CHIP 470 1/10W(2012)
R146	1-216-041-00	s RESISTOR, CHIP 470 1/10W(2012)
R147	1-216-625-11	s RESISTOR,CHIP 82 1/10W
R148	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R149	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R150	1-216-611-11	s RESISTOR,CHIP 22 1/10W (2012)

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Ref. No. or Q'ty	Part No.	SP Description
R151	1-216-611-11	s RESISTOR,CHIP 22 1/10W (2012)
R152	1-216-613-11	s RESISTOR,CHIP 27 1/10W(2012)
R153	1-216-625-11	s RESISTOR,CHIP 82 1/10W
R154	1-216-669-11	s RESISTOR,CHIP 5.6K 1/10W(2012)
R155	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R156	1-216-661-11	s RESISTOR,CHIP 2.7K 1/10W(2012)
R161	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R162	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R163	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R164	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R165	1-216-097-00	s RESISTOR CHIP 100K 1/10W(2012)
R166	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R167	1-216-097-00	s RESISTOR CHIP 100K 1/10W(2012)
R168	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R169	1-216-097-00	s RESISTOR CHIP 100K 1/10W(2012)
R170	1-216-077-00	s RESISTOR,CHIP 15K 1/10W(2012)
R171	1-216-095-00	s RESISTOR, CHIP 82K 1/10W(2012)
R172	1-216-059-00	s RESISTOR,CHIP 2.7K 1/10W(2012)
R173	1-216-663-11	s RESISTOR,CHIP 3.3K 1/10W(2012)
R175	1-216-077-00	s RESISTOR,CHIP 15K 1/10W(2012)
R176	1-216-095-00	s RESISTOR, CHIP 82K 1/10W(2012)
R177	1-216-091-00	s RESISTOR CHIP 56K 1/10W(2012)
R178	1-216-663-11	s RESISTOR,CHIP 3.3K 1/10W(2012)
R180	1-216-077-00	s RESISTOR,CHIP 15K 1/10W(2012)
R181	1-216-095-00	s RESISTOR, CHIP 82K 1/10W(2012)
R182	1-216-091-00	s RESISTOR CHIP 56K 1/10W(2012)
R183	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R184	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R185	1-216-101-00	s RESISTOR CHIP 150K 1/10W(2012)
R186	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R187	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R188	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R189	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R190	1-216-075-00	s RESISTOR CHIP 12K 1/10W(2012)
R191	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
R192	1-216-059-00	s RESISTOR,CHIP 2.7K 1/10W(2012)
R193	1-216-059-00	s RESISTOR,CHIP 2.7K 1/10W(2012)
R196	1-216-041-00	s RESISTOR, CHIP 470 1/10W(2012)
R198	1-216-041-00	s RESISTOR, CHIP 470 1/10W(2012)
R199	1-216-065-91	s RESISTOR,CHIP 4.7K 1/10W(2012)
R200	1-216-613-11	s RESISTOR,CHIP 27 1/10W(2012)
R201	1-216-097-00	s RESISTOR CHIP 100K 1/10W(2012)
R202	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R203	1-216-679-11	s RESISTOR,CHIP 15K 1/10W (2012)
R204	1-216-696-11	s RESISTOR,CHIP 75K 1/10W(2012)
R205	1-216-689-11	s RESISTOR,CHIP 39K 1/10W(2012)
R206	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R207	1-216-097-00	s RESISTOR CHIP 100K 1/10W(2012)
R208	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R209	1-216-097-00	s RESISTOR CHIP 100K 1/10W(2012)
R210	1-216-073-00	s RESISTOR,CHIP 10K 1/10W(2012)
R211	1-216-097-00	s RESISTOR CHIP 100K 1/10W(2012)
R212	1-216-611-11	s RESISTOR,CHIP 22 1/10W (2012)
R213	1-216-611-11	s RESISTOR,CHIP 22 1/10W (2012)
R214	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
R215	1-216-097-00	s RESISTOR CHIP 100K 1/10W(2012)
R216	1-216-015-00	s RESISTOR,CHIP 39 1/10W(2012)
R217	1-216-097-00	s RESISTOR CHIP 100K 1/10W(2012)
R218	1-216-295-00	s CONDUCTOR, CHIP (2012)

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R219 1-216-624-11 s RESISTOR,CHIP 75 1/10W(2012)
R220 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
R221 1-216-107-00 s RESISTOR,CHIP 270K 1/10W(2012)
R222 1-216-121-00 s RESISTOR CHIP 1M 1/10W(2012)
R223 1-216-625-11 s RESISTOR,CHIP 82 1/10W

R224 1-216-669-11 s RESISTOR,CHIP 5.6K 1/10W(2012)
R225 1-216-055-00 s RESISTOR CHIP 1.8K 1/10W(2012)
R226 1-216-061-00 s RESISTOR CHIP 3.3K 1/10W(2012)
R227 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
R228 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)

R229 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
R230 1-216-069-00 s RESISTOR,CHIP 6.8K 1/10W(2012)
R231 1-216-648-11 s RESISTOR,CHIP 750 1/10W (2012)
R234 1-216-661-11 s RESISTOR,CHIP 2.7K 1/10W(2012)
R236 1-216-101-00 s RESISTOR CHIP 150K 1/10W(2012)

R237 1-216-063-91 s RESISTOR,CHIP 3.9K 1/10W(2125)
R242 1-216-113-00 s RESISTOR CHIP 470K 1/10W(2012)
R243 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
R244 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
R245 1-216-063-91 s RESISTOR,CHIP 3.9K 1/10W(2125)

R246 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R247 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
R249 1-216-063-91 s RESISTOR,CHIP 3.9K 1/10W(2125)
R250 1-216-295-00 s CONDUCTOR, CHIP (2012)
R251 1-216-681-11 s RESISTOR,CHIP 18K 1/10W (2012)

R252 1-216-672-11 s RESISTOR,CHIP 7.5K 1/10W(2012)
R253 1-216-664-11 s RESISTOR,CHIP 3.6K 1/10W(2125)
R254 1-216-677-11 s RESISTOR,CHIP 12K 1/10W(2012)
R255 1-216-121-00 s RESISTOR CHIP 1M 1/10W(2012)
R256 1-216-667-11 s RESISTOR,CHIP 4.7K 1/10W(2012)

R260 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
R261 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
R262 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
R263 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R270 1-216-033-00 s RESISTOR,CHIP 220 1/10W(2012)

R271 1-216-105-91 s RESISTOR,CHIP 220K 1/10W(2125)
R272 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
R273 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
R274 1-216-077-00 s RESISTOR,CHIP 15K 1/10W(2012)
R275 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)

R276 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R277 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R278 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R279 1-216-077-00 s RESISTOR,CHIP 15K 1/10W(2012)
R280 1-216-061-00 s RESISTOR CHIP 3.3K 1/10W(2012)

R281 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
R282 1-216-081-00 s RESISTOR,CHIP 22K 1/10W(2012)
R283 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R284 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
R285 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)

R286 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R287 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R289 1-216-295-00 s CONDUCTOR, CHIP (2012)
R293 1-216-682-11 s RESISTOR,CHIP 20K 1/10W (2012)
R294 1-216-693-11 s RESISTOR CHIP 56K 1/10W (2012)

R301 1-216-085-00 s RESISTOR CHIP 33K 1/10W(2012)
R302 1-216-081-00 s RESISTOR,CHIP 22K 1/10W(2012)
R303 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
R304 1-216-648-11 s RESISTOR,CHIP 750 1/10W (2012)

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R305 1-216-639-11 s RESISTOR,CHIP 330 1/10W (2012)
R306 1-216-639-11 s RESISTOR,CHIP 330 1/10W (2012)
R307 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
R308 1-216-053-00 s RESISTOR CHIP 1.5K 1/10W(2012)
R309 1-216-061-00 s RESISTOR CHIP 3.3K 1/10W(2012)

R310 1-216-021-00 s RESISTOR,CHIP 68 1/10W(2012)
R312 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R313 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
R314 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
R315 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)

R316 1-216-657-11 s RESISTOR,CHIP 1.8K 1/10W(2012)
R317 1-216-671-11 s RESISTOR,CHIP 6.8K 1/10W(2012)
R318 1-216-665-11 s RESISTOR,CHIP 3.9K 1/10W(2012)
R319 1-216-077-00 s RESISTOR,CHIP 15K 1/10W(2012)
R320 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)

R321 1-216-047-91 s RESISTOR, CHIP 820 1/10W(2125)
R322 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
R323 1-216-295-00 s CONDUCTOR, CHIP (2012)
R325 1-216-061-00 s RESISTOR CHIP 3.3K 1/10W(2012)
R326 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)

R327 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R328 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
R329 1-216-121-00 s RESISTOR CHIP 1M 1/10W(2012)
R330 1-216-053-00 s RESISTOR CHIP 1.5K 1/10W(2012)
R331 1-216-041-00 s RESISTOR, CHIP 470 1/10W(2012)

R332 1-216-678-11 s RESISTOR,CHIP 13K 1/10W(2012)
R333 1-216-682-11 s RESISTOR,CHIP 20K 1/10W (2012)
R334 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
R335 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
R336 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)

R337 1-216-037-00 s RESISTOR,CHIP 330 1/10W(2012)
R338 1-216-113-00 s RESISTOR CHIP 470K 1/10W(2012)
R339 1-216-768-11 s RESISTOR,CHIP 470K 1/10W(2012)
R340 1-216-755-11 s RESISTOR,CHIP 130K1/10W(2012)
R341 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)

R342 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R343 1-216-689-11 s RESISTOR,CHIP 39K 1/10W(2012)
R344 1-216-679-11 s RESISTOR,CHIP 15K 1/10W (2012)
R345 1-216-696-11 s RESISTOR,CHIP 75K 1/10W(2012)
R346 1-216-077-00 s RESISTOR,CHIP 15K 1/10W(2012)

R347 1-216-689-11 s RESISTOR,CHIP 39K 1/10W(2012)
R348 1-216-679-11 s RESISTOR,CHIP 15K 1/10W (2012)
R349 1-216-696-11 s RESISTOR,CHIP 75K 1/10W(2012)
R350 1-216-067-00 s RESISTOR,CHIP 5.6K 1/10W(2012)
R351 1-216-689-11 s RESISTOR,CHIP 39K 1/10W(2012)

R352 1-216-679-11 s RESISTOR,CHIP 15K 1/10W (2012)
R353 1-216-696-11 s RESISTOR,CHIP 75K 1/10W(2012)
R354 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R355 1-216-067-00 s RESISTOR,CHIP 5.6K 1/10W(2012)
R356 1-216-676-11 s RESISTOR,CHIP 11K 1/10W(2012)

R357 1-216-697-91 s RESISTOR,CHIP 82K 1/10W
R358 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R359 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R360 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
R361 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)

R362 1-216-665-11 s RESISTOR,CHIP 3.9K 1/10W(2012)
R363 1-216-661-11 s RESISTOR,CHIP 2.7K 1/10W(2012)
R364 1-216-681-11 s RESISTOR,CHIP 18K 1/10W (2012)
R366 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)

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R367 1-216-689-11 s RESISTOR,CHIP 39K 1/10W(2012)
 R368 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R369 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R370 1-216-653-11 s RESISTOR,CHIP 1.2K 1/10W(2012)
 R371 1-216-059-00 s RESISTOR,CHIP 2.7K 1/10W(2012)
 R372 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
 R373 1-216-661-11 s RESISTOR,CHIP 2.7K 1/10W(2012)
 R374 1-216-657-11 s RESISTOR,CHIP 1.8K 1/10W(2012)
 R375 1-216-680-11 s RESISTOR CHIP 16K 1/10W (2012)
 R376 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R377 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
 R378 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
 R379 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
 R380 1-216-689-11 s RESISTOR,CHIP 39K 1/10W(2012)
 R381 1-216-685-11 s RESISTOR,CHIP 27K 1/10W(2012)
 R382 1-216-685-11 s RESISTOR,CHIP 27K 1/10W(2012)
 R383 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
 R384 1-216-689-11 s RESISTOR,CHIP 39K 1/10W(2012)
 R385 1-216-693-11 s RESISTOR CHIP 56K 1/10W (2012)
 R386 1-216-693-11 s RESISTOR CHIP 56K 1/10W (2012)
 R387 1-216-690-11 s RESISTOR,CHIP 43K 1/10W(2012)
 R388 1-216-115-00 s RESISTOR,CHIP 560K 1/10W(2012)
 R390 1-216-689-11 s RESISTOR,CHIP 39K 1/10W(2012)
 R391 1-216-691-11 s RESISTOR,CHIP 47K 1/10W(2012)
 R392 1-216-684-91 s RESISTOR,CHIP 24K 1/10W
 R393 1-216-688-11 s RESISTOR,CHIP 36K 1/10W(2012)
 R394 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R395 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R396 1-216-121-00 s RESISTOR CHIP 1M 1/10W(2012)
 R397 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R398 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R399 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R400 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R401 1-216-089-00 s RESISTOR CHIP 47K 1/10W(2012)
 R402 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R403 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R404 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R405 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R406 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R407 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R408 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R409 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R410 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R411 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R412 1-216-071-00 s RESISTOR,CHIP 8.2K 1/10W(2012)
 R413 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R414 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R415 1-216-651-11 s RESISTOR,CHIP 1K 1/10W(2012)
 R416 1-216-651-11 s RESISTOR,CHIP 1K 1/10W(2012)
 R417 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R418 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R419 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R420 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R421 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R422 1-216-081-00 s RESISTOR,CHIP 22K 1/10W(2012)
 R423 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R424 1-216-059-00 s RESISTOR,CHIP 2.7K 1/10W(2012)
 R425 1-216-081-00 s RESISTOR,CHIP 22K 1/10W(2012)
 R426 1-216-085-00 s RESISTOR CHIP 33K 1/10W(2012)

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R427 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R428 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R429 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R430 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R433 1-216-295-00 s CONDUCTOR, CHIP (2012)
 R434 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R435 1-216-651-11 s RESISTOR,CHIP 1K 1/10W(2012)
 R436 1-216-651-11 s RESISTOR,CHIP 1K 1/10W(2012)
 R437 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R438 1-216-663-11 s RESISTOR,CHIP 3.3K 1/10W(2012)
 R439 1-216-051-00 s RESISTOR,CHIP 1.2K 1/10W(2012)
 R440 1-216-659-11 s RESISTOR,CHIP 2.2K 1/10W(2012)
 R441 1-216-659-11 s RESISTOR,CHIP 2.2K 1/10W(2012)
 R442 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R443 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R444 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R445 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R446 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R448 1-216-015-00 s RESISTOR,CHIP 39 1/10W(2012)
 R449 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R450 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R451 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R452 1-216-015-00 s RESISTOR,CHIP 39 1/10W(2012)
 R453 1-216-015-00 s RESISTOR,CHIP 39 1/10W(2012)
 R454 1-216-051-00 s RESISTOR,CHIP 1.2K 1/10W(2012)
 R455 1-216-663-11 s RESISTOR,CHIP 3.3K 1/10W(2012)
 R456 1-216-659-11 s RESISTOR,CHIP 2.2K 1/10W(2012)
 R457 1-216-659-11 s RESISTOR,CHIP 2.2K 1/10W(2012)
 R458 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R460 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R461 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R462 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R463 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R464 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R465 1-216-015-00 s RESISTOR,CHIP 39 1/10W(2012)
 R466 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R467 1-216-089-00 s RESISTOR CHIP 47K 1/10W(2012)
 R469 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R470 1-216-699-11 s RESISTOR,CHIP 100K 1/10W(2012)
 R471 1-218-753-11 s RESISTOR CHIP 110K 1/10W(2012)
 R472 1-216-295-00 s CONDUCTOR, CHIP (2012)
 R473 1-216-013-00 s RESISTOR,CHIP 33 1/10W(2012)
 R474 1-216-015-00 s RESISTOR,CHIP 39 1/10W(2012)
 R475 1-216-634-11 s RESISTOR,CHIP 200 1/10W(2012)
 R476 1-216-634-11 s RESISTOR,CHIP 200 1/10W(2012)
 R477 1-216-634-11 s RESISTOR,CHIP 200 1/10W(2012)
 R478 1-216-663-11 s RESISTOR,CHIP 3.3K 1/10W(2012)
 R479 1-216-015-00 s RESISTOR,CHIP 39 1/10W(2012)
 R480 1-216-295-00 s CONDUCTOR, CHIP (2012)
 R481 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R482 1-216-650-11 s RESISTOR,CHIP 910 1/10W(2012)
 R483 1-216-667-11 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R484 1-216-662-11 s RESISTOR,CHIP 3K 1/10W (2012)
 R485 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R486 1-216-651-11 s RESISTOR,CHIP 1K 1/10W(2012)
 R487 1-216-627-11 s RESISTOR,CHIP 100 1/10W (2012)
 R489 1-216-665-11 s RESISTOR,CHIP 3.9K 1/10W(2012)
 R490 1-216-651-11 s RESISTOR,CHIP 1K 1/10W(2012)
 R491 1-216-651-11 s RESISTOR,CHIP 1K 1/10W(2012)

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R492 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R493 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R494 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R495 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R496 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)

R497 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R498 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R501 1-216-089-00 s RESISTOR CHIP 47K 1/10W(2012)
 R502 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R503 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)

R504 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R506 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R507 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R508 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R509 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)

R510 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R511 1-216-651-11 s RESISTOR,CHIP 1K 1/10W(2012)
 R512 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R513 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R514 1-216-651-11 s RESISTOR,CHIP 1K 1/10W(2012)

R515 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R516 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R518 1-216-051-00 s RESISTOR,CHIP 1.2K 1/10W(2012)
 R519 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R520 1-216-067-00 s RESISTOR,CHIP 5.6K 1/10W(2012)

R521 1-216-672-11 s RESISTOR,CHIP 7.5K 1/10W(2012)
 R522 1-216-063-91 s RESISTOR,CHIP 3.9K 1/10W(2012)
 R523 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R524 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R526 1-216-013-00 s RESISTOR,CHIP 33 1/10W(2012)

R528 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R529 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R530 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R531 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R533 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)

R534 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R535 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R536 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R537 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R538 1-216-689-11 s RESISTOR,CHIP 39K 1/10W(2012)

R539 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
 R540 1-216-673-11 s RESISTOR,CHIP 8.2K 1/10W(2012)
 R541 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R542 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R543 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)

R544 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R550 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R570 1-216-637-11 s RESISTOR,CHIP 270 1/10W (2012)
 R571 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R572 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)

R573 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R574 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R575 1-216-677-11 s RESISTOR,CHIP 12K 1/10W(2012)
 R580 1-216-295-00 s CONDUCTOR, CHIP (2012)
 R581 1-216-001-00 s RESISTOR, CHIP 10 1/10W(2012)

R582 1-216-295-00 s CONDUCTOR, CHIP (2012)
 R583 1-216-015-00 s RESISTOR,CHIP 39 1/10W(2012)
 R585 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R590 1-216-295-00 s CONDUCTOR, CHIP (2012)

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R592 1-216-295-00 s CONDUCTOR, CHIP (2012)
 R594 1-216-295-00 s CONDUCTOR, CHIP (2012)
 R601 1-216-089-00 s RESISTOR CHIP 47K 1/10W(2012)
 R602 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R603 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)

R604 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R606 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R607 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R608 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R610 1-216-055-00 s RESISTOR CHIP 1.8K 1/10W(2012)

R611 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R618 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R619 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R621 1-216-691-11 s RESISTOR,CHIP 47K 1/10W(2012)
 R622 1-216-684-91 s RESISTOR,CHIP 24K 1/10W

R623 1-216-681-11 s RESISTOR,CHIP 18K 1/10W (2012)
 R625 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R626 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R628 1-216-295-00 s CONDUCTOR, CHIP (2012)
 R629 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)

R630 1-216-673-11 s RESISTOR,CHIP 8.2K 1/10W(2012)
 R631 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
 R632 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R633 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R634 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)

R635 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R636 1-216-295-00 s CONDUCTOR, CHIP (2012)
 R637 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R638 1-216-673-11 s RESISTOR,CHIP 8.2K 1/10W(2012)
 R639 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)

R640 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R641 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R642 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R643 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R660 1-216-013-00 s RESISTOR,CHIP 33 1/10W(2012)

R661 1-216-013-00 s RESISTOR,CHIP 33 1/10W(2012)
 R662 1-216-689-11 s RESISTOR,CHIP 39K 1/10W(2012)
 R663 1-216-689-11 s RESISTOR,CHIP 39K 1/10W(2012)
 R670 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R671 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)

R672 1-216-670-11 s RESISTOR,CHIP 6.2K 1/10W(2012)
 R673 1-216-659-11 s RESISTOR,CHIP 2.2K 1/10W(2012)
 R674 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R675 1-216-655-11 s RESISTOR,CHIP 1.5K 1/10W(2012)
 R676 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)

R677 1-216-668-11 s RESISTOR,CHIP 5.1K 1/10W(2012)
 R678 1-216-051-00 s RESISTOR,CHIP 1.2K 1/10W(2012)
 R679 1-216-659-11 s RESISTOR,CHIP 2.2K 1/10W(2012)
 R680 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R681 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)

R682 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R683 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R684 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R685 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R700 1-216-047-91 s RESISTOR, CHIP 820 1/10W(2125)

R701 1-216-639-11 s RESISTOR,CHIP 330 1/10W (2012)
 R702 1-216-639-11 s RESISTOR,CHIP 330 1/10W (2012)
 R703 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R704 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)

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R712 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R713 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R714 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R715 1-216-081-00 s RESISTOR,CHIP 22K 1/10W(2012)
 R717 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R718 1-216-639-11 s RESISTOR,CHIP 330 1/10W (2012)
 R719 1-216-639-11 s RESISTOR,CHIP 330 1/10W (2012)
 R720 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R721 1-216-061-00 s RESISTOR CHIP 3.3K 1/10W(2012)
 R722 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R734 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R736 1-216-668-11 s RESISTOR,CHIP 5.1K 1/10W(2012)
 R737 1-216-051-00 s RESISTOR,CHIP 1.2K 1/10W(2012)
 R738 1-216-659-11 s RESISTOR,CHIP 2.2K 1/10W(2012)
 R739 1-216-057-00 s RESISTOR CHIP 2.2K 1/10W(2012)
 R740 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R741 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R742 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R743 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R744 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R753 1-216-047-91 s RESISTOR, CHIP 820 1/10W(2125)
 R754 1-216-639-11 s RESISTOR,CHIP 330 1/10W (2012)
 R755 1-216-639-11 s RESISTOR,CHIP 330 1/10W (2012)
 R756 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R757 1-216-061-00 s RESISTOR CHIP 3.3K 1/10W(2012)
 R758 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R759 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R797 1-216-059-00 s RESISTOR,CHIP 2.7K 1/10W(2012)
 R798 1-216-059-00 s RESISTOR,CHIP 2.7K 1/10W(2012)
 R801 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R802 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R803 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R804 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R805 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R806 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R807 1-216-025-00 s RESISTOR,CHIP 100 1/10W(2012)
 R808 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R809 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R810 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R811 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R812 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R813 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R814 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R815 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R816 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R817 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R818 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R819 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R820 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R821 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R822 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R823 1-216-067-00 s RESISTOR,CHIP 5.6K 1/10W(2012)
 R824 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R825 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R830 1-216-065-91 s RESISTOR,CHIP 4.7K 1/10W(2012)
 R831 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R832 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R833 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R834 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)

(BD BOARD)

Ref. No.
or Q'ty Part No. SP Description

R835 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R836 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R837 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R838 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R839 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R840 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R841 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R842 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R843 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R844 1-216-045-00 s RESISTOR,CHIP 680 1/10W(2012)
 R845 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R846 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R847 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R848 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R849 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R850 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R851 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R852 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R853 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R854 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R855 1-216-049-11 s RESISTOR, CHIP 1K 1/10W(2012)
 R860 1-216-073-00 s RESISTOR,CHIP 10K 1/10W(2012)
 R861 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
 R862 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
 R863 1-216-675-11 s RESISTOR,CHIP 10K 1/10W(2012)
 R864 1-216-097-00 s RESISTOR CHIP 100K 1/10W(2012)
 R866 1-216-295-00 s CONDUCTOR, CHIP (2012)
 RB1 1-233-577-11 s RESISTOR, CHIP NETWORK 470
 RB2 1-233-577-11 s RESISTOR, CHIP NETWORK 470
 RB3 1-233-577-11 s RESISTOR, CHIP NETWORK 470
 RB4 1-233-577-11 s RESISTOR, CHIP NETWORK 470
 RB5 1-233-577-11 s RESISTOR, CHIP NETWORK 470
 RB6 1-233-577-11 s RESISTOR, CHIP NETWORK 470
 RB7 1-233-577-11 s RESISTOR, CHIP NETWORK 470
 RB8 1-233-577-11 s RESISTOR, CHIP NETWORK 470
 RB9 1-233-577-11 s RESISTOR, CHIP NETWORK 470
 X301 1-760-457-11 s VIBRATOR, CRYSTAL (VCO)
 X302 1-527-722-00 s CRYSTAL OSCILLATOR(14.31818MH)
 X801 1-578-689-21 s VIBRATOR, LITHIUM

BD2 BOARD

(BD2 BOARD)

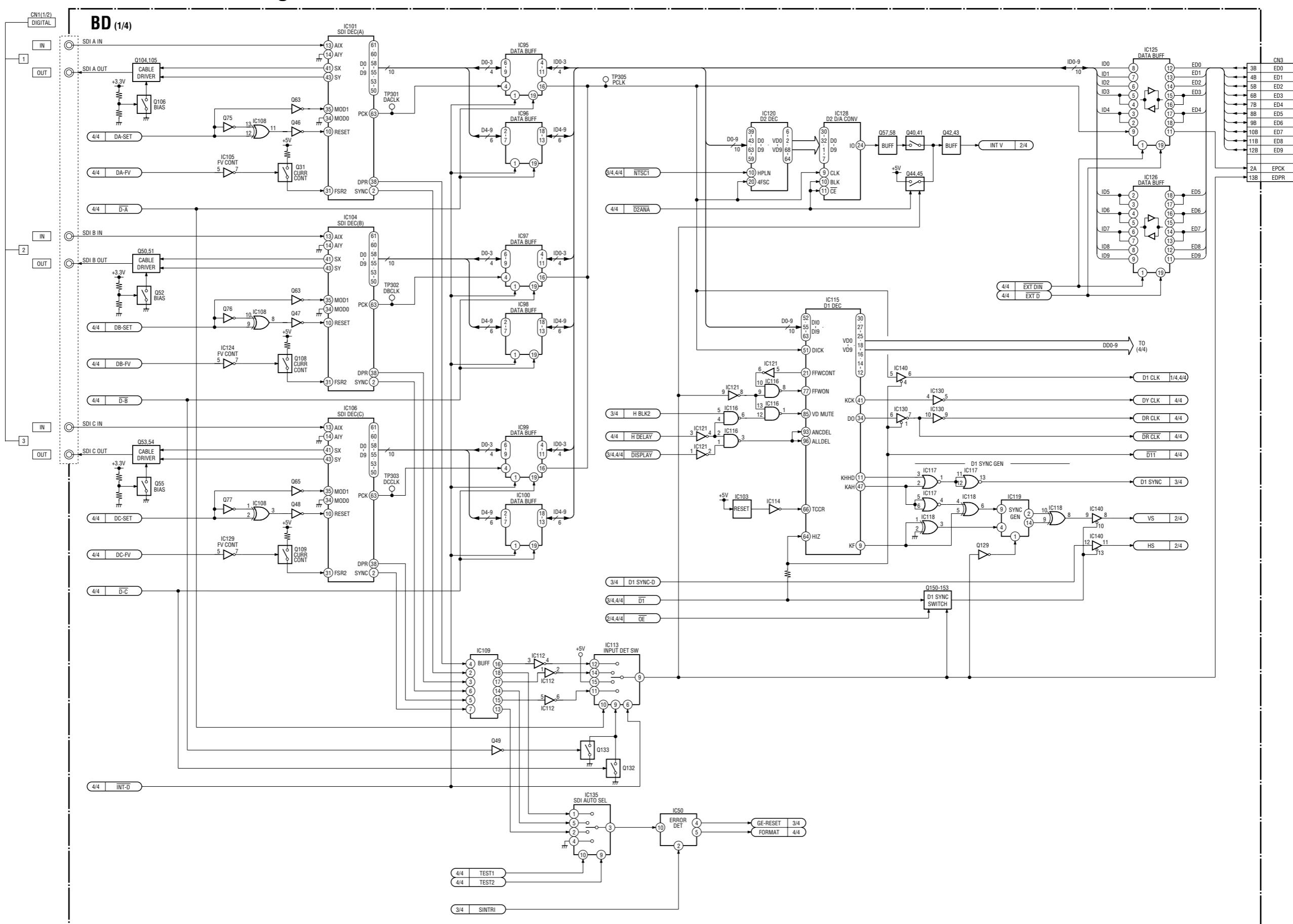
Ref. No. or Q'ty	Part No.	SP Description	Ref. No. or Q'ty	Part No.	SP Description
1pc	A-1131-734-A	s MOUNTED CIRCUIT BOARD, BD2	R903	1-216-049-11	s RESISTOR, CHIP 1K 1/10W(2012)
C900	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V	R904	1-216-665-11	s RESISTOR,CHIP 3.9K 1/10W(2012)
C901	1-126-391-11	s CAPACITOR ELECT 47MF/6.3V(105)	R905	1-216-667-11	s RESISTOR,CHIP 4.7K 1/10W(2012)
C902	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V	R906	1-216-633-11	s RESISTOR,CHIP 180 1/10W (2012)
C903	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V	R907	1-216-630-11	s RESISTOR,CHIP 130 1/10W(2012)
C904	1-126-206-11	s CAPACITOR, ELECT 100MF/6.3V	R908	1-216-055-00	s RESISTOR CHIP 1.8K 1/10W(2012)
C905	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF	R909	1-216-055-00	s RESISTOR CHIP 1.8K 1/10W(2012)
C906	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF	R910	1-216-624-11	s RESISTOR,CHIP 75 1/10W(2012)
C907	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF	R911	1-216-611-11	s RESISTOR,CHIP 22 1/10W (2012)
C908	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF	R920	1-216-651-11	s RESISTOR,CHIP 1K 1/10W(2012)
C909	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C910	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C911	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C912	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C913	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C914	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V			
C915	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C916	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C917	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C918	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C919	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C920	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C923	1-126-391-11	s CAPACITOR ELECT 47MF/6.3V(105)			
C924	1-126-391-11	s CAPACITOR ELECT 47MF/6.3V(105)			
C930	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V			
C931	1-163-038-00	s CAPACITOR, CERAMIC 0.1MF/25V			
C935	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C936	1-163-031-11	s CAPACITOR, CHIP CERAMIC 0.01MF			
C940	1-126-391-11	s CAPACITOR ELECT 47MF/6.3V(105)			
C941	1-126-206-11	s CAPACITOR, ELECT 100MF/6.3V			
C942	1-126-206-11	s CAPACITOR, ELECT 100MF/6.3V			
CN5	1-774-391-11	o CONNECTOR, BOARD TO BOARD 60P			
FB901	1-239-719-31	s FILTER, CHIP EMI			
FB902	1-239-719-31	s FILTER, CHIP EMI			
FL901	1-543-309-21	s BEAD,FERRITE			
IC903	8-752-360-44	s IC CXK1203AR			
IC904	8-752-360-44	s IC CXK1203AR			
IC905	8-752-339-46	s IC CXD1177Q			
IC906	8-759-271-84	s IC TC7SH02FU			
IC907	8-759-929-26	s IC TL431CPS			
IC908	8-759-472-65	s IC 74VHC574MTCX			
IC909	8-759-472-65	s IC 74VHC574MTCX			
IC910	8-759-472-65	s IC 74VHC574MTCX			
IC911	8-759-079-45	s IC TC74AC283F			
IC912	8-759-079-45	s IC TC74AC283F			
IC913	8-759-079-45	s IC TC74AC283F			
IC914	8-759-079-45	s IC TC74AC283F			
IC915	8-759-079-45	s IC TC74AC283F			
IC916	8-759-079-45	s IC TC74AC283F			
IC917	8-759-472-65	s IC 74VHC574MTCX			
IC918	8-759-472-65	s IC 74VHC574MTCX			
IC919	8-759-472-65	s IC 74VHC574MTCX			
Q901	8-729-026-49	s TRANSISTOR 2SA1037AK-T146-R			
Q902	8-729-026-49	s TRANSISTOR 2SA1037AK-T146-R			

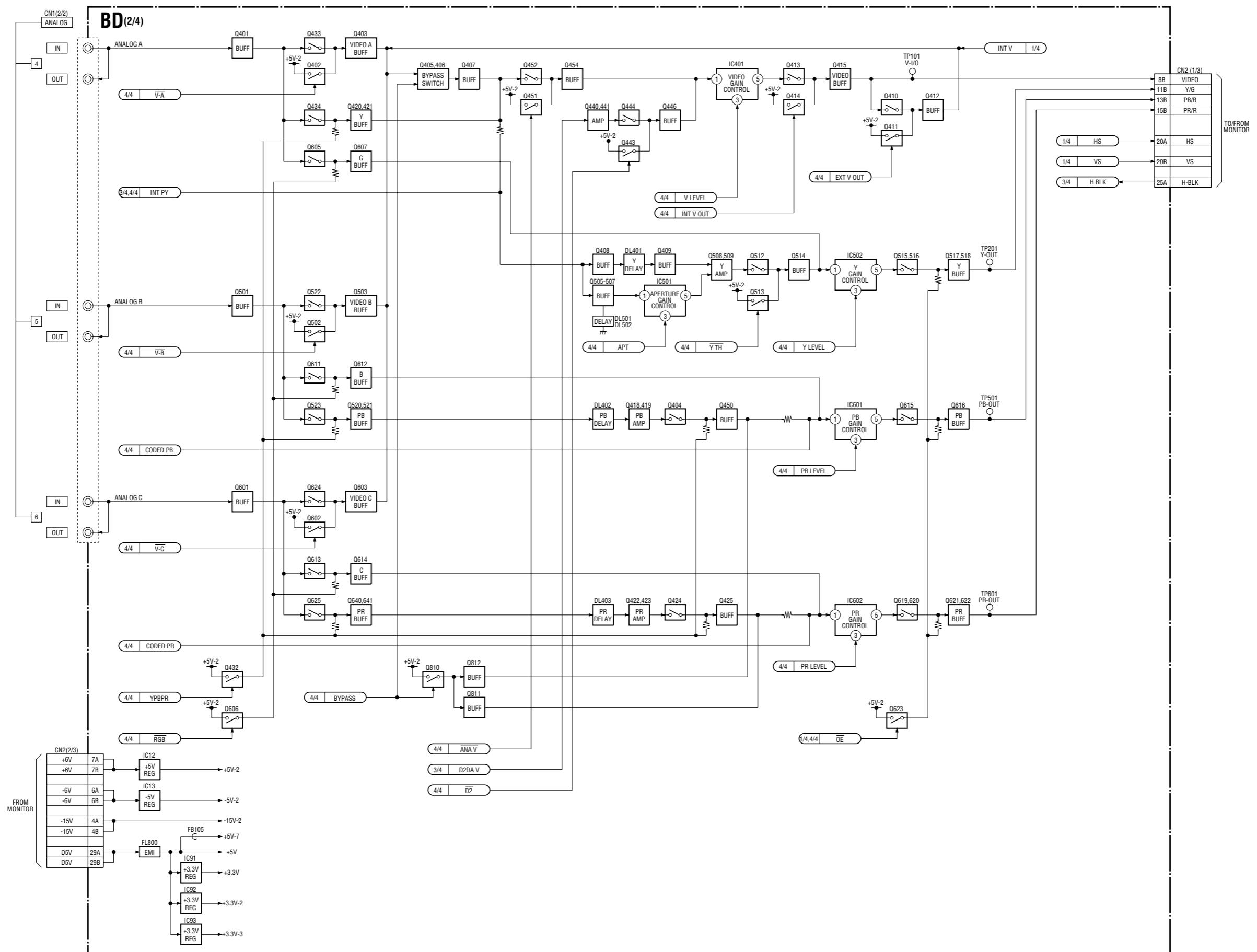
6-4. Supplied Accessories

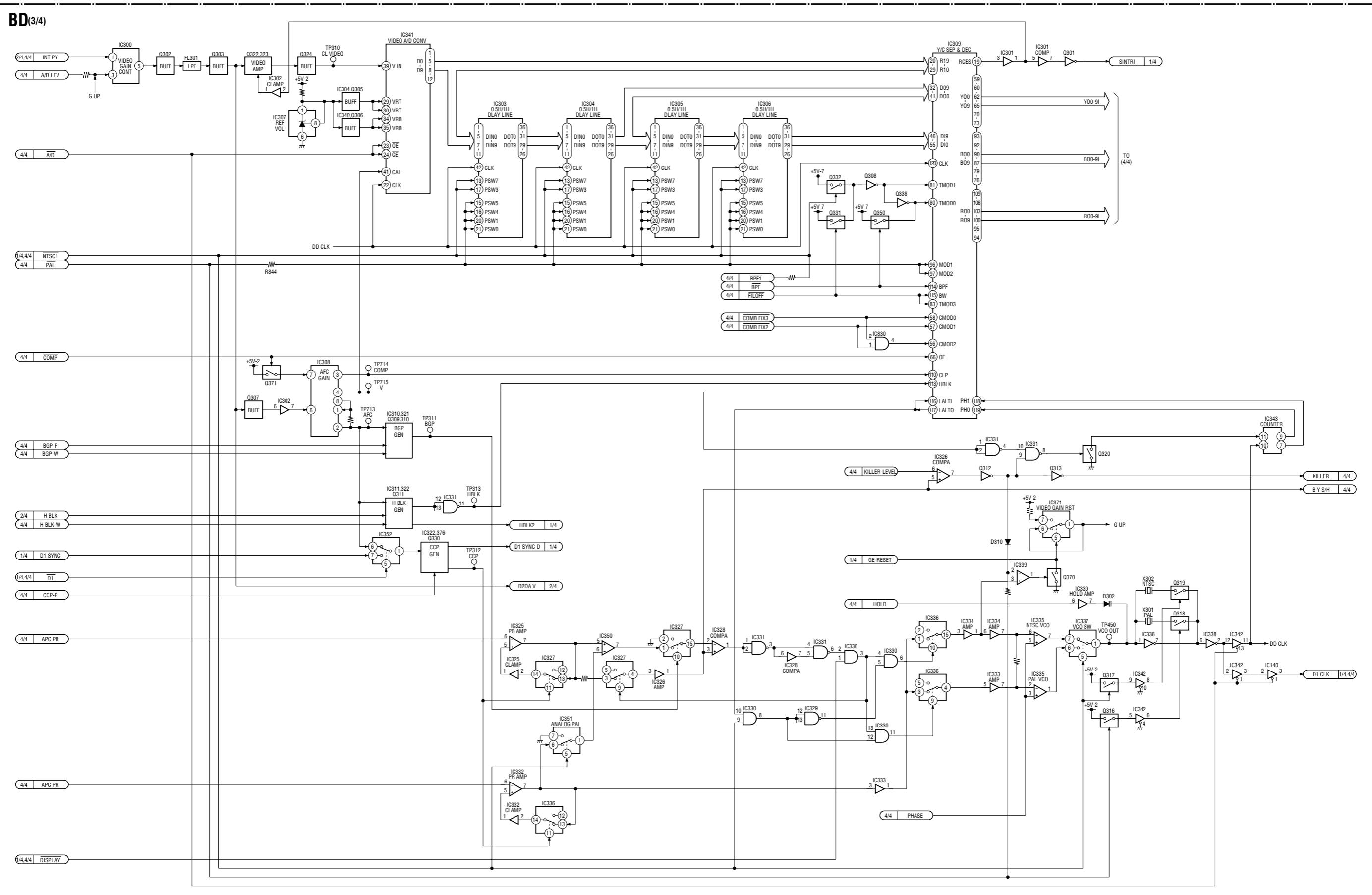
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1pc	3-810-095-06	s MANUAL, OPERATION (JAPANESE,ENGLISH)

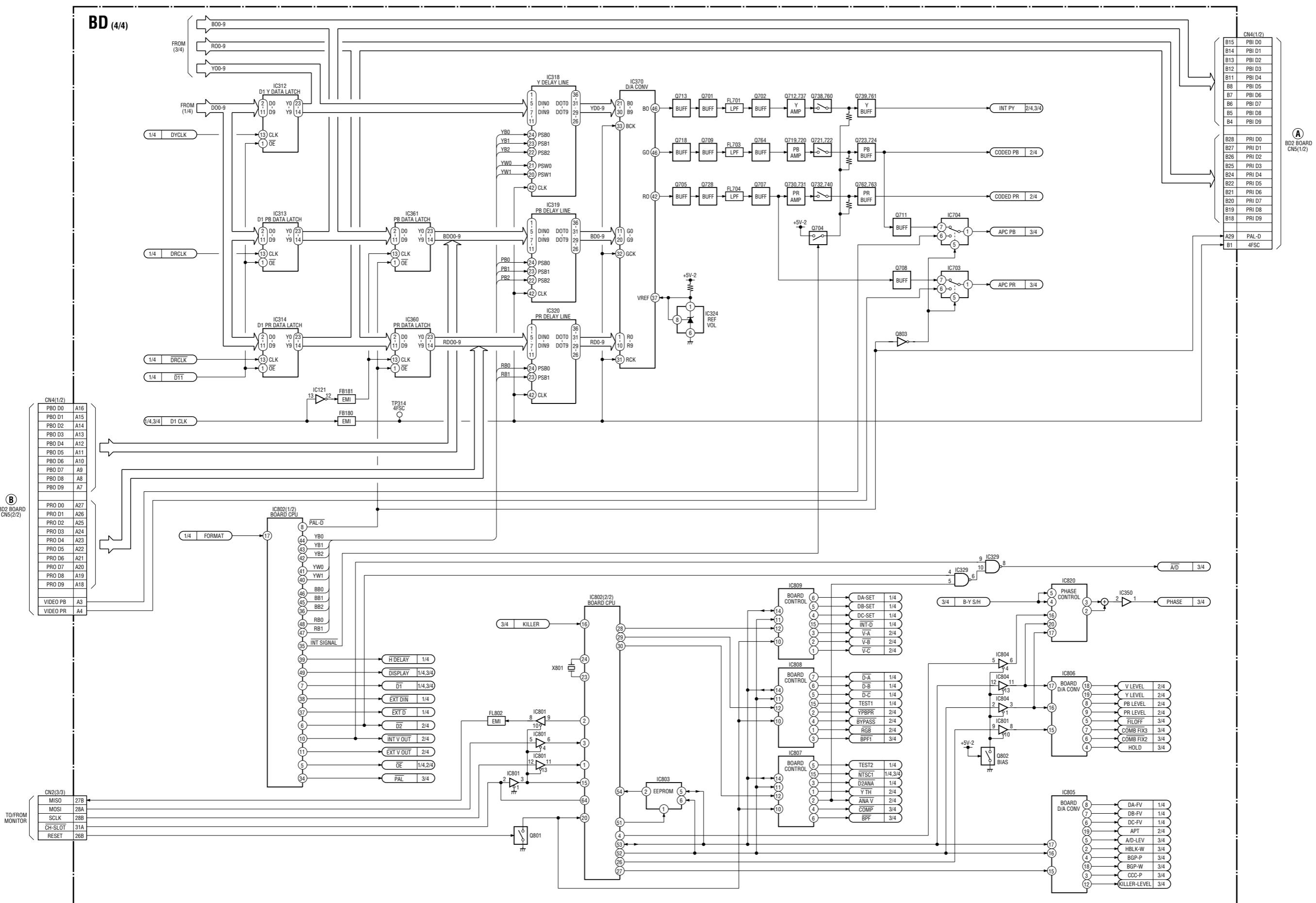
Section 7

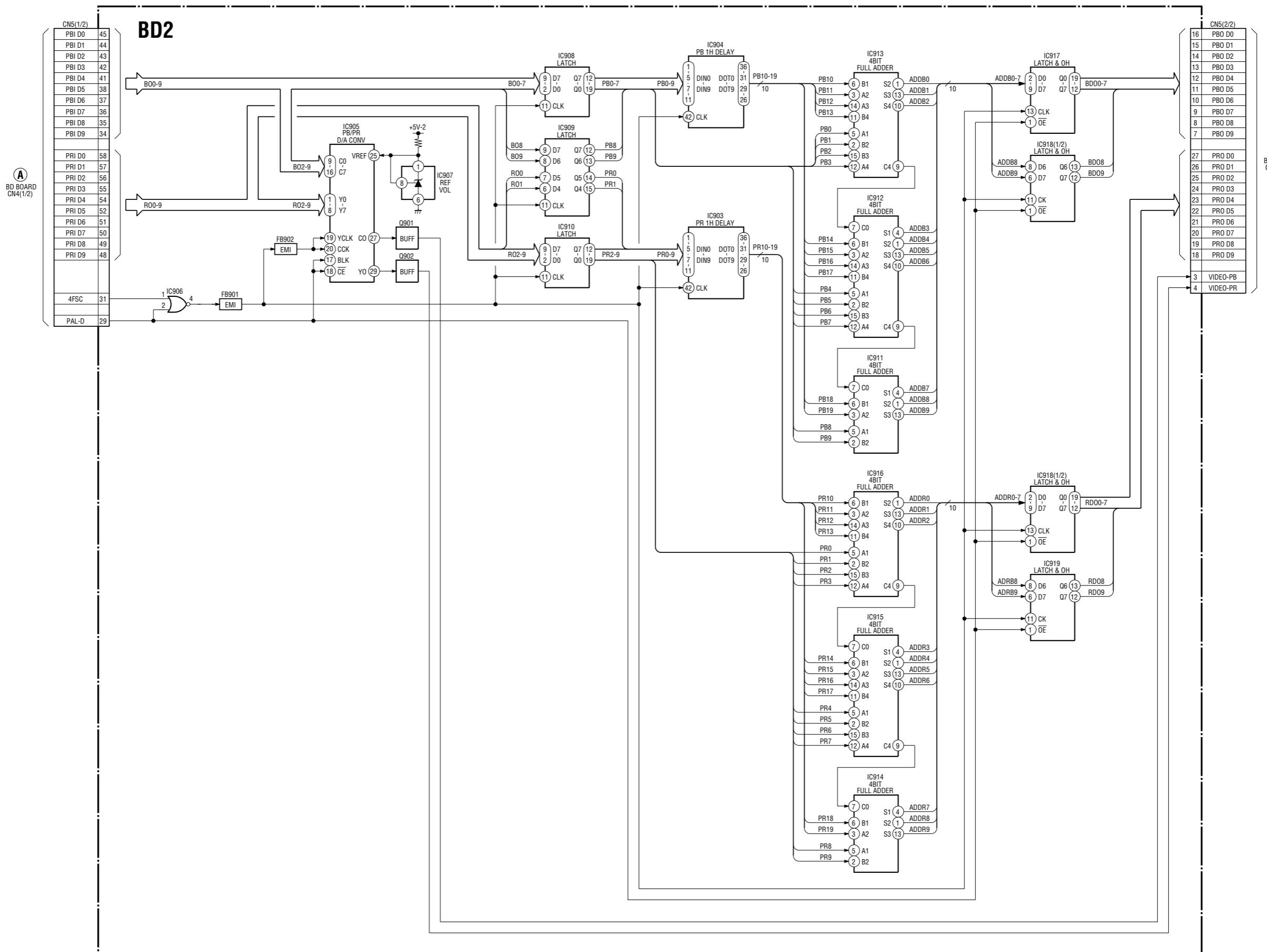
Block Diagrams













Section 8

Diagrams

Note:

- Parts marked “*” differ according to the model/destination. Refer to the mount table for each function.
- The parts marked “#” on schematic diagrams are not mounted.
- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$ 50WV or less are not indicated except for electrolytics.
- All electrolytics are in 50 V unless otherwise specified.
-  : fusible resistor
-  : nonflammable resistor
-  : internal component
-  : panel designation and adjustment for repair
- Caution when replacing chip parts
New parts must be attached after removal of the chip.
- Be careful not to heat the minus side of a tantalum capacitor, because it is easily damaged by the heat.

Reference information

RESISTOR	RN	: METAL FILM
	RC	: SOLID
	FPRD	: NONFLAMMABLE CARBON
	FUSE	: NONFLAMMABLE FUSIBLE
	RS	: NONFLAMMABLE METAL OXIDE
	RB	: NONFLAMMABLE CEMENT
	RW	: NONFLAMMABLE WIREWOUND
	※	: ADJUSTMENT RESISTOR
COIL	LF-8L	: MICRO INDUCTOR
CAPACITOR	TA	: TANTALUM
	PS	: STYROL
	PP	: POLYPROPYLENE
	PT	: MYLAR
	MPS	: METALIZED POLYESTER
	MPP	: METALIZED POLYPROPYLENE
	ALB	: BIPOLAR
	ALT	: HIGH TEMPERATURE
	ALR	: HIGH RIPPLE

[Measuring conditions, voltage and waveform]

- A voltage value is the reference value between the measurement point and the earth, when the NTSC composite Video signal and SDI signal are received from the color bar generator (digital multimeter used: 10 M ohms/V DC).
- Unit of voltage is V (volt).
-  : B line
- Voltage variations may occur due to normal production tolerances.
- Circled numbers indicate the reference waveform.
-  : Signal path.

【使用上の注意】

- *印のある部品は、機種などにより異なりますので機種別マウント一覧表を参照してください。
- 回路図中の#マークはマウントされていません。
- ケミコン、タンタルを除くコンデンサで耐圧 50V 以下のものは、その耐圧を省略。単位はすべて μF (pは pF)
- ケミコン、タンタルのコンデンサで耐圧 50V は省略。
-  印はヒューズ抵抗。
-  印は不燃性抵抗。
-  印は内蔵部品。
-  印はパネル表示名称および調整名称。
- チップ部品交換時の注意
取り外した部品は再使用せず、未使用の部品をご使用ください。
タンタルコンデンサのマイナス側は熱に弱いため注意してください。

【電圧・波形測定条件注意】

- 電圧値は、カラーバーゼネレータより NTSC コンポジットビデオ信号、および、SDI 信号を受信したときの対アース間の参考値。
(使用デジタルマルチメーター 10 M Ω /V DC)
- 電圧値の単位は V (ボルト)
-  : B ライン
(実測値は異なる場合があります。)
- 丸数字は波形表の番号。
-  は信号経路。

一部品特性省略表一

- 固定抵抗

RN	: 金属被膜
RC	: ソリッド
FPRD	: 不燃性カーボン
FUSE	: 不燃性ヒューズ
RS	: 不燃性酸化金属被膜
RB	: 不燃性セメント
RW	: 不燃性巻線
※	: 調整抵抗
- マイクロインダクタ

LF-8L	: マイクロインダクタ
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- コンデンサ

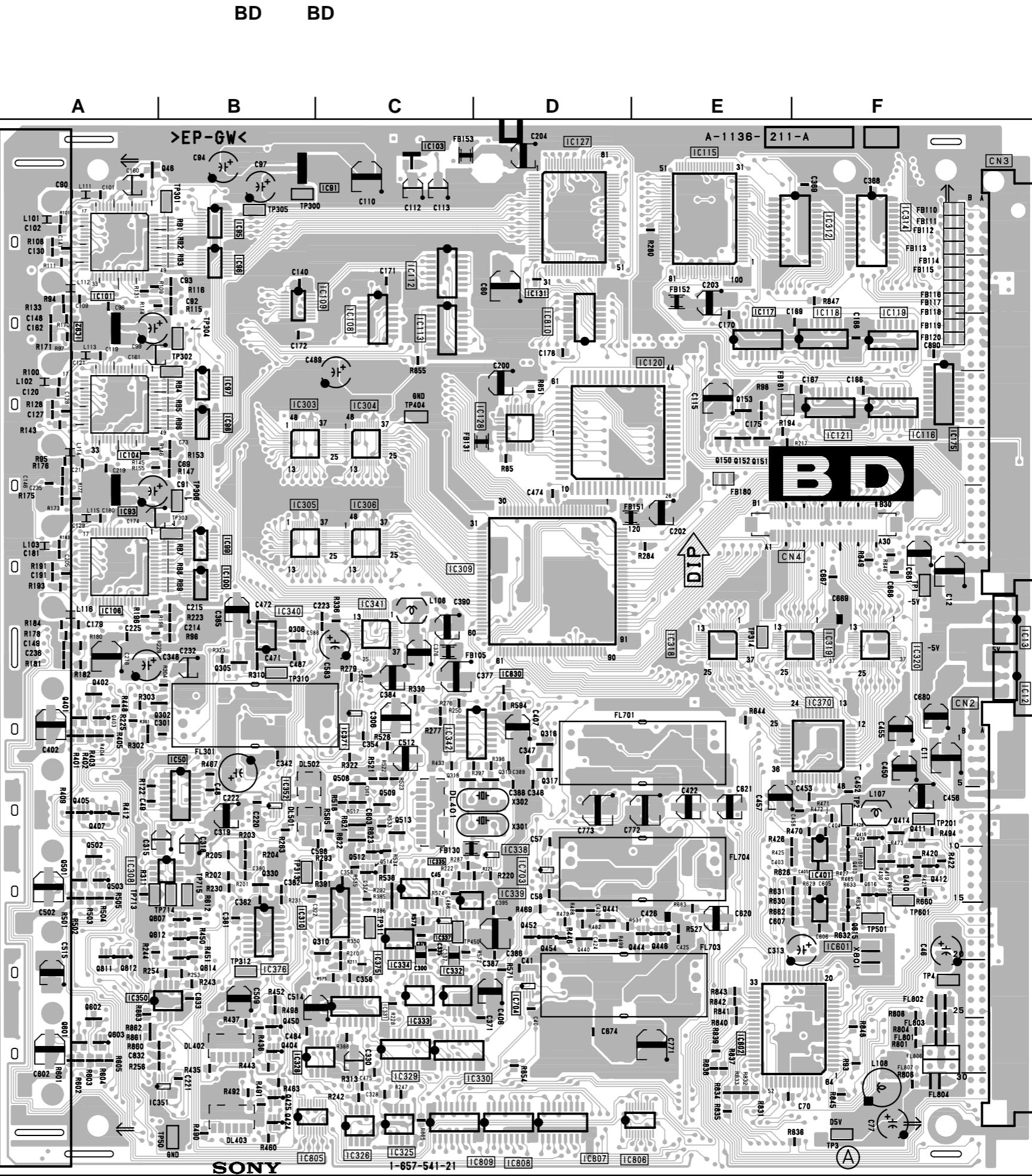
TA	: タンタル
PS	: スチロール
PP	: ポリプロピレン
PT	: マイラ
MPS	: メタライズドポリエステル
MPP	: メタライズドポリプロピレン
ALB	: バイポーラ
ALT	: 高温用
ALR	: ハイリップル

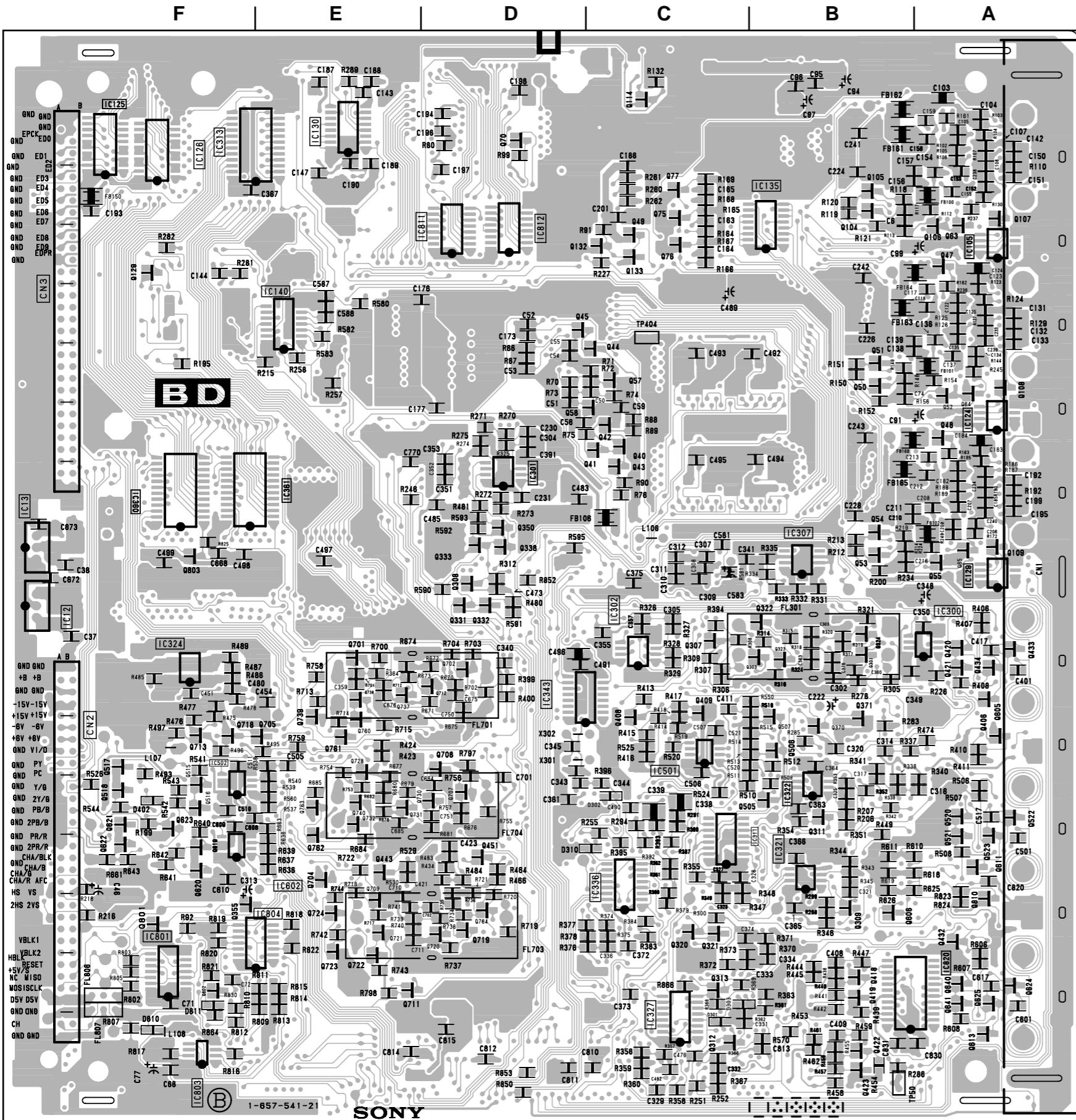
8-1. Schematic Diagrams and Printed Wiring Boards

BD BOARD

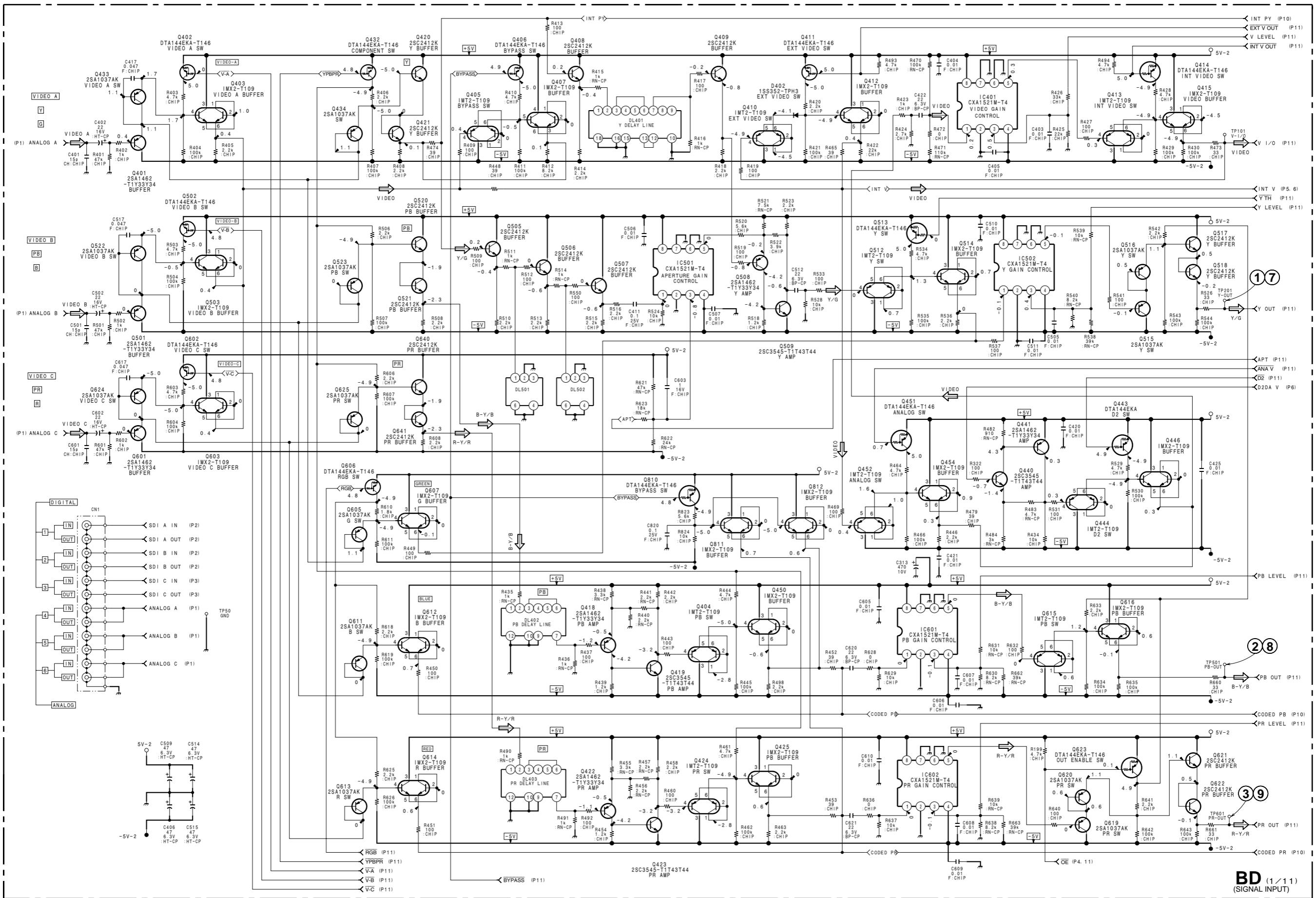
*: B SIDE

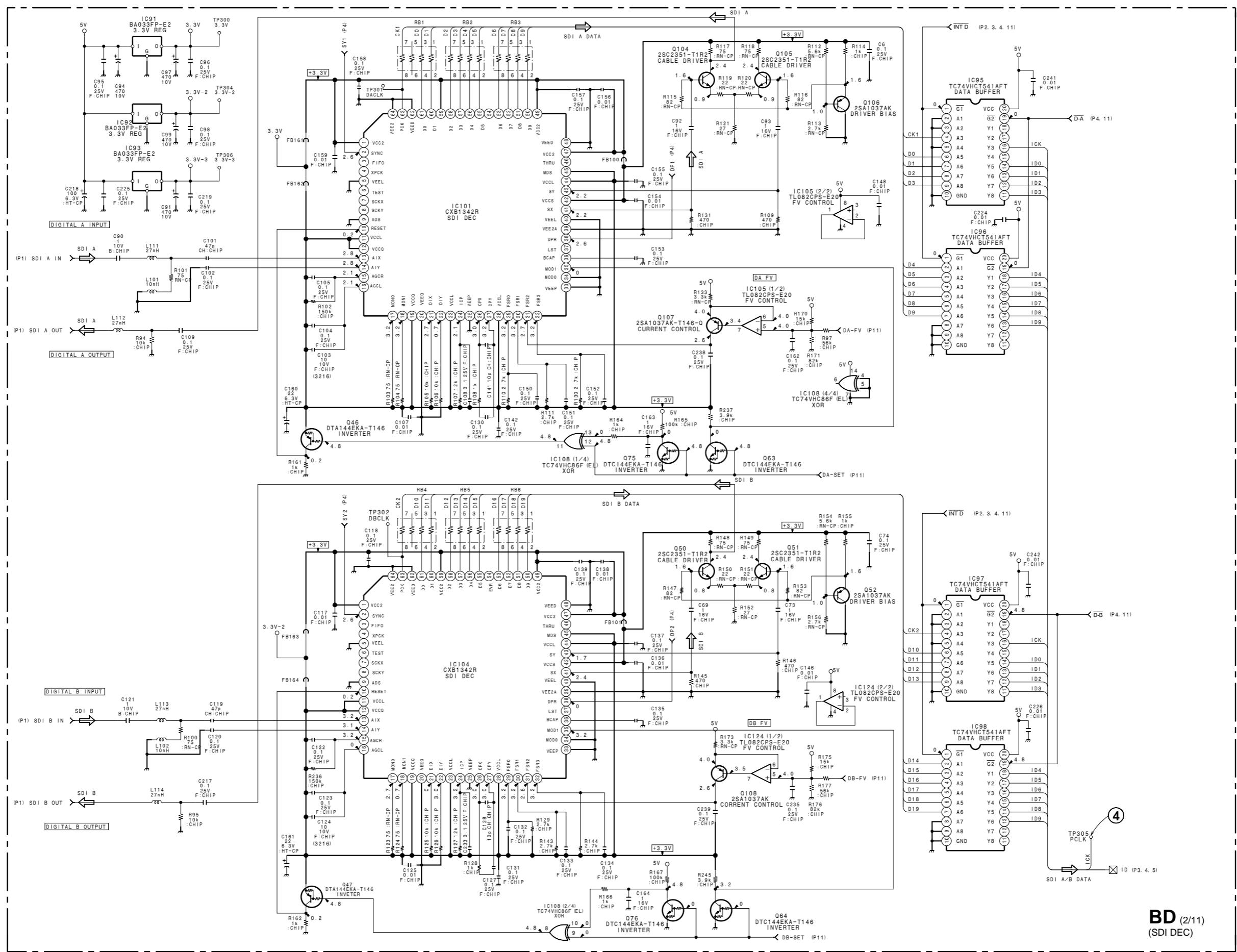
D301	* C-7	IC351	B-7	Q323	* B-4	Q704	* E-6
D302	* C-5	IC352	B-5	Q324	* B-4	Q705	* E-5
D303	* C-6	IC360	* F-3	Q330	B-5	Q707	* D-5
D310	* D-6	IC361	* F-3	Q331	* D-4	Q708	* D-5
D402	* F-5	IC370	F-4	Q332	* D-4	Q709	* E-6
D810	* F-7	IC371	C-4	Q333	* D-4	Q711	* E-6
D811	* F-6	IC375	C-6	Q338	* D-4	Q712	* D-5
IC12	F-4	IC401	F-5	Q355	* F-6	Q713	* F-5
IC13	F-4	IC501	* C-5	Q370	* B-5	Q718	* F-5
IC50	B-5	IC502	* F-5	Q371	* B-5	Q719	* D-6
IC91	B-1	IC601	F-6	Q401	A-4	Q720	* D-6
IC92	A-2	IC602	* E-6	Q402	A-4	Q721	* E-6
IC93	A-3	IC703	D-5	Q403	A-4	Q722	* E-6
IC95	B-1	IC704	D-6	Q404	B-6	Q723	* E-6
IC96	B-1	IC801	* F-6	Q405	A-5	Q724	* E-5
IC97	B-2	IC802	E-6	Q406	* A-5	Q728	* E-5
IC98	B-2	IC803	* F-7	Q407	A-5	Q730	* E-5
IC99	B-3	IC804	E-6	Q408	* C-5	Q731	* E-5
IC100	B-3	IC805	B-7	Q409	* C-5	Q732	* E-5
IC101	A-2	IC806	E-6	Q410	F-5	Q737	* E-5
IC103	C-1	IC807	D-7	Q411	F-5	Q738	* E-5
IC104	A-2	IC808	D-7	Q412	F-5	Q739	* E-5
IC105	* A-2	IC809	C-7	Q413	F-5	Q740	* E-5
IC106	A-3	IC810	D-2	Q414	F-5	Q760	* E-5
IC108	C-2	IC811	* D-2	Q415	F-5	Q761	* E-5
IC109	C-2	IC812	* D-2	Q418	* B-6	Q763	* E-5
IC112	C-1	IC820	* A-6	Q419	B-6	Q764	* D-6
IC113	C-2	IC830	D-4	Q420	* A-4	Q801	* F-6
IC115	E-1			Q421	* A-4	Q802	* F-6
IC116	F-2	Q40	* C-3	Q422	* B-7	Q803	* F-4
IC117	E-2	Q41	* C-3	Q423	* B-7	Q810	* A-6
IC118	F-2	Q42	* C-3	Q424	B-7	Q811	A-6
IC119	F-2	Q43	* C-3	Q425	B-7	Q812	A-6
IC120	E-2	Q44	* C-2	Q432	* A-6		
IC121	F-2	Q45	* D-2	Q433	* A-4		
IC124	* A-3	Q46	A-1	Q434	* A-4		
IC125	* F-1	Q47	* A-2	Q440	D-6		
IC126	* F-1	Q48	* A-3	Q441	D-6		
IC127	D-1	Q49	* C-2	Q443	* E-6		
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IC129	* A-4	Q51	D-3	Q446	E-6		
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IC131	D-2	Q53	* B-4	Q451	* D-6		
IC135	* B-2	Q54	* B-4	Q452	D-6		
IC140	* E-2	Q55	* A-4	Q454	D-6		
IC175	F-2	Q57	* C-3	Q501	A-5		
IC300	* A-4	Q58	D-3	Q502	A-5		
IC301	* D-3	Q63	A-2	Q503	A-5		
IC302	* C-4	Q64	* A-3	Q505	* B-5		
IC303	B-2	Q65	* A-4	Q506	* B-5		
IC304	C-2	Q70	* D-1	Q507	* B-5		
IC305	B-3	Q75	C-2	Q508	C-5		
IC306	C-3	Q76	C-2	Q509	C-5		
IC307	* B-4	Q77	* C-1	Q512	C-5		
IC308	A-5	Q104	* B-2	Q513	C-5		
IC309	D-3	Q105	B-1	Q514	C-5		
IC310	B-6	Q106	* A-2	Q515	* F-5		
IC311	* C-5	Q107	* A-2	Q516	* F-5		
IC312	F-1	Q108	* A-3	Q517	* F-5		
IC313	* F-1	Q109	* A-4	Q518	* F-5		
IC314	F-1	Q114	C-1	Q520	* A-5		
IC318	E-4	Q129	F-2	Q521	* A-5		
IC319	F-4	Q132	C-2	Q522	* A-5		
IC320	F-4	Q133	* C-2	Q523	* A-5		
IC321	* B-6	Q150	E-3	Q601	A-6		
IC322	* B-5	Q151	E-3	Q602	A-6		
IC324	* F-4	Q152	E-3	Q603	A-6		
IC325	C-7	Q153	E-2	Q605	* A-6		
IC326	C-7	Q301	* B-4	Q606	* B-6		
IC327	* C-7	Q302	A-4	Q607	B-6		
IC328	C-6	Q303	* B-4	Q611	* A-6		
IC329	C-6	Q305	B-4	Q612	B-6		
IC330	C-6	Q306	B-4	Q613	* A-7		
IC331	C-6	Q307	* C-4	Q614	B-6		
IC332	C-6	Q308	* D-4	Q615	F-6		
IC333	C-6	Q309	B-6	Q616	F-5		
IC334	C-6	Q310	C-6	Q619	* F-5		
IC335	C-5	Q311	* B-5	Q620	* F-6		
IC336	C-6	Q312	C-7	Q621	* F-5		
IC337	C-6	Q313	* C-6	Q622	* F-5		
IC338	D-5	Q316	D-4	Q623	* F-5		
IC339	D-5	Q317	D-5	Q624	* A-6		
IC340	B-4	Q318	C-5	Q625	* A-6		
IC341	C-4	Q319	D-5	Q640	* A-6		
IC342	C-4	Q320	* C-6	Q641	* A-6		
IC343	* D-5	Q321	* C-6	Q701	* E-4		
IC350	B-6	Q322	* B-4	Q702	* D-4		

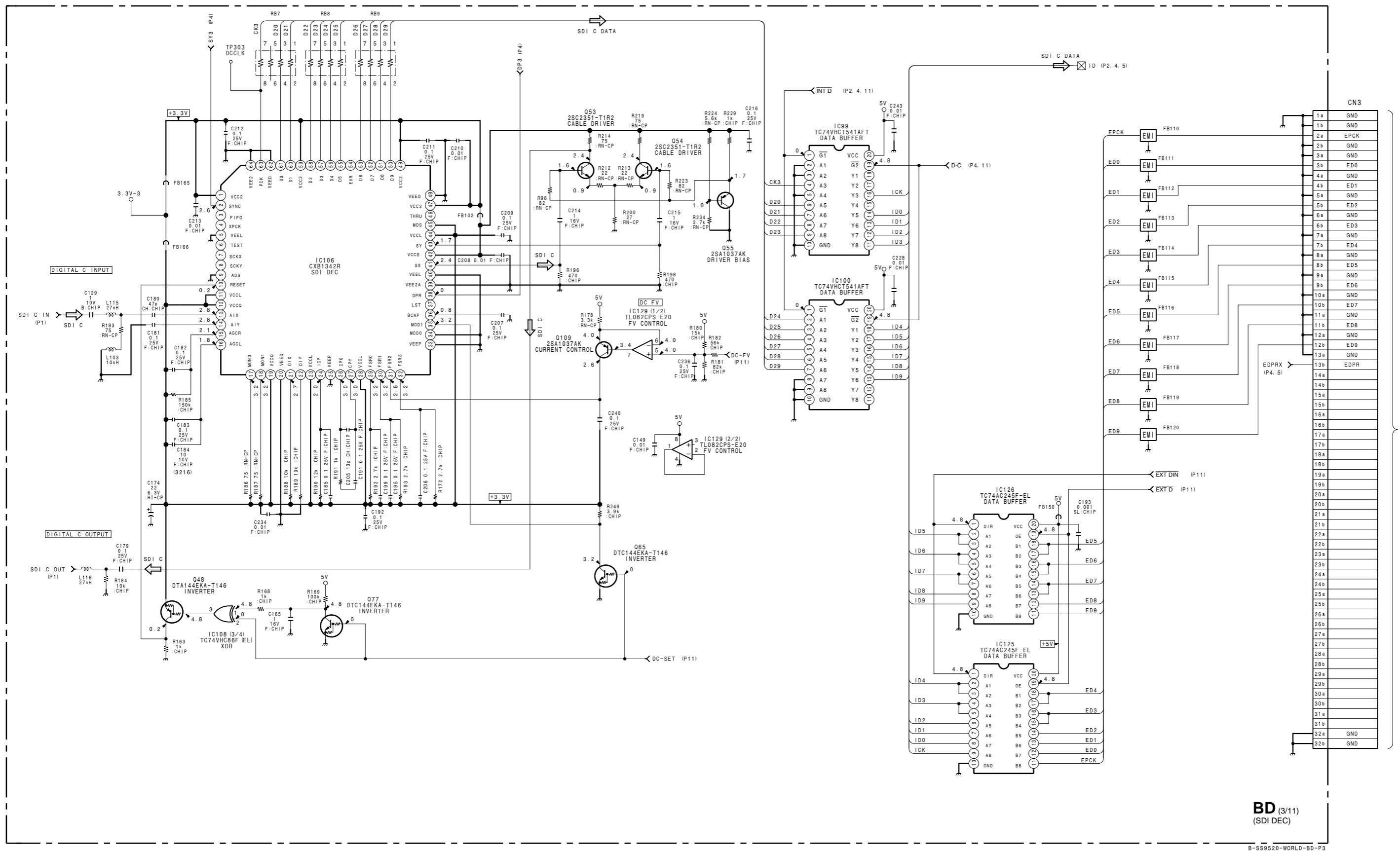


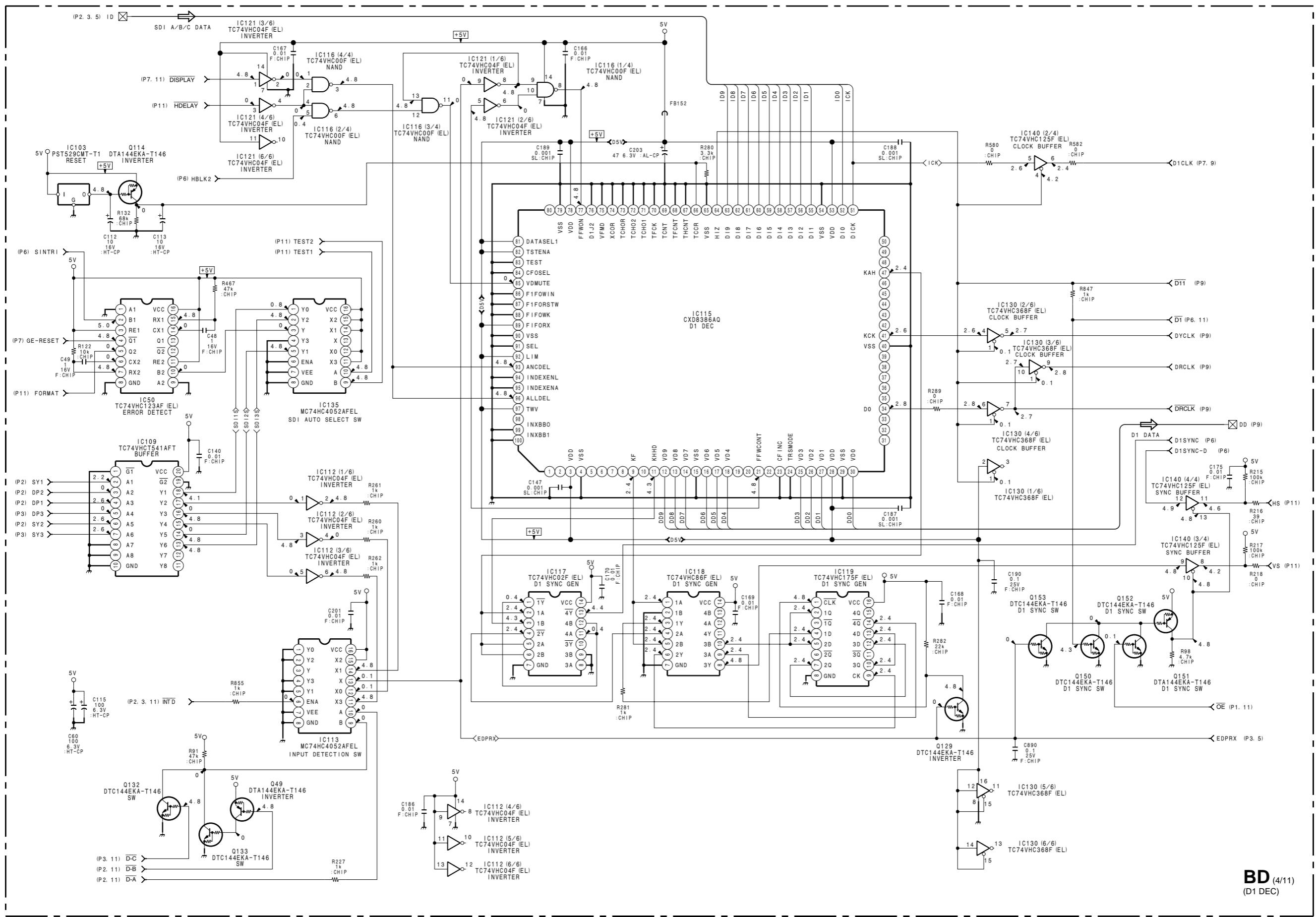


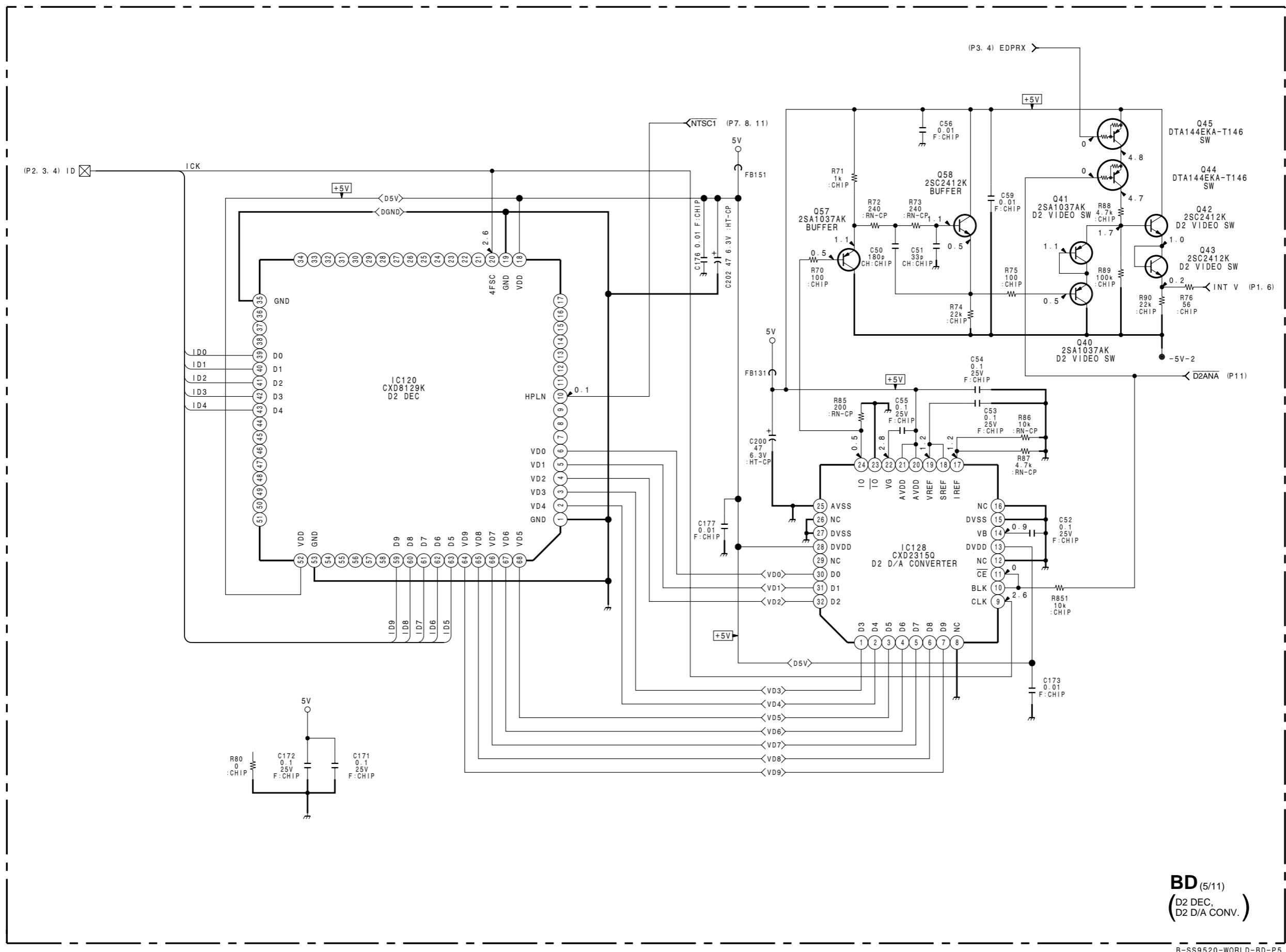
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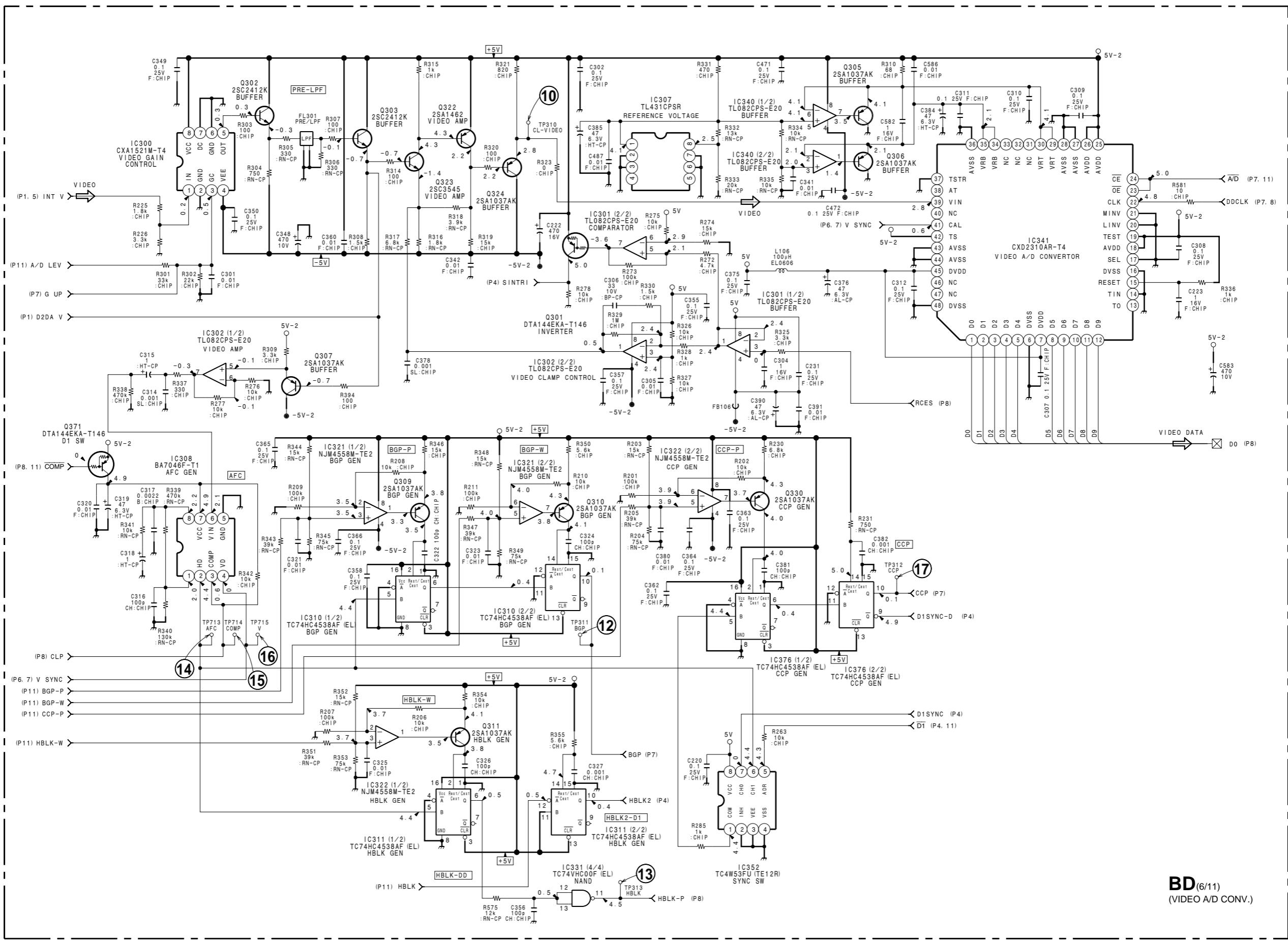


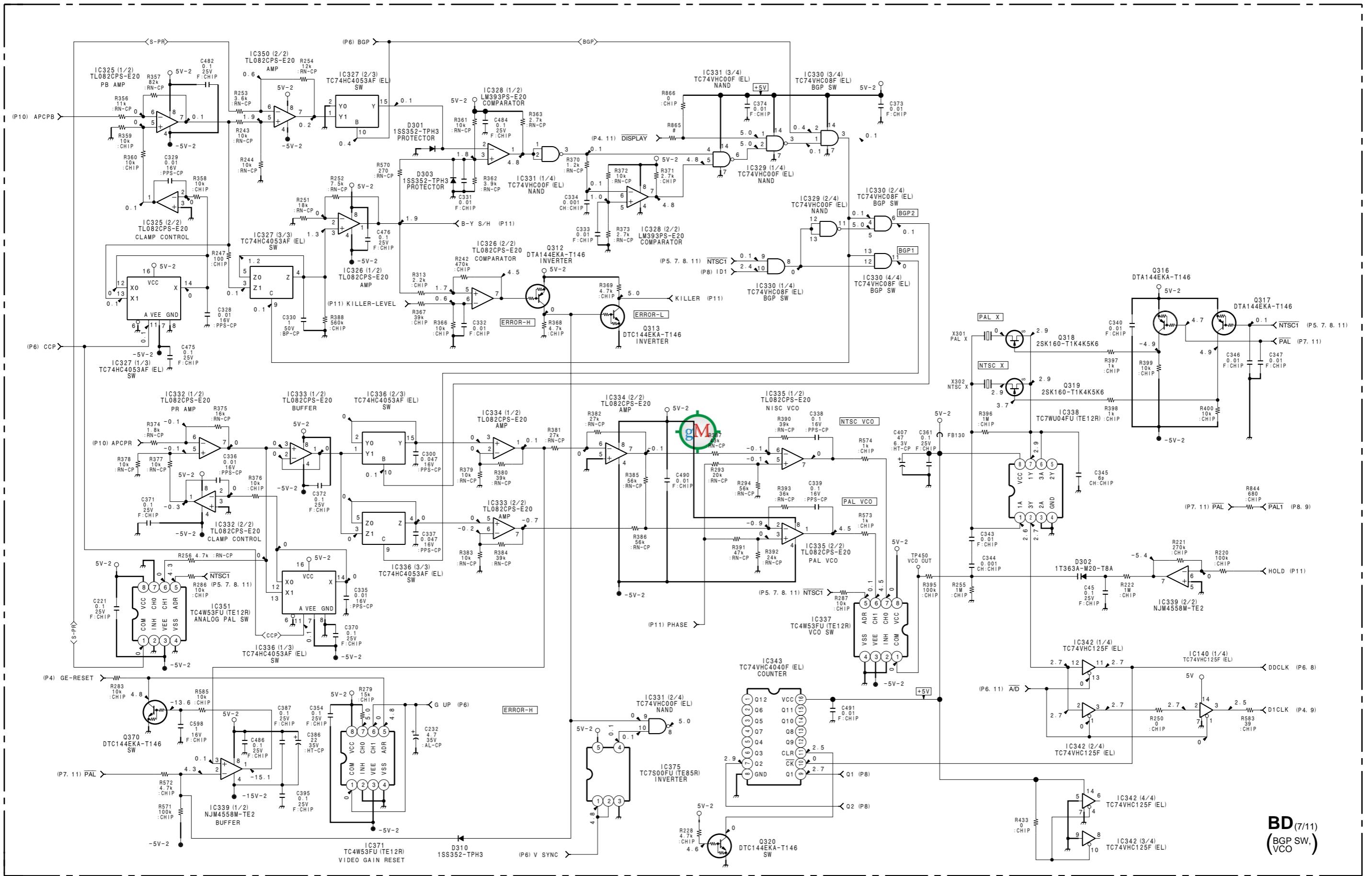




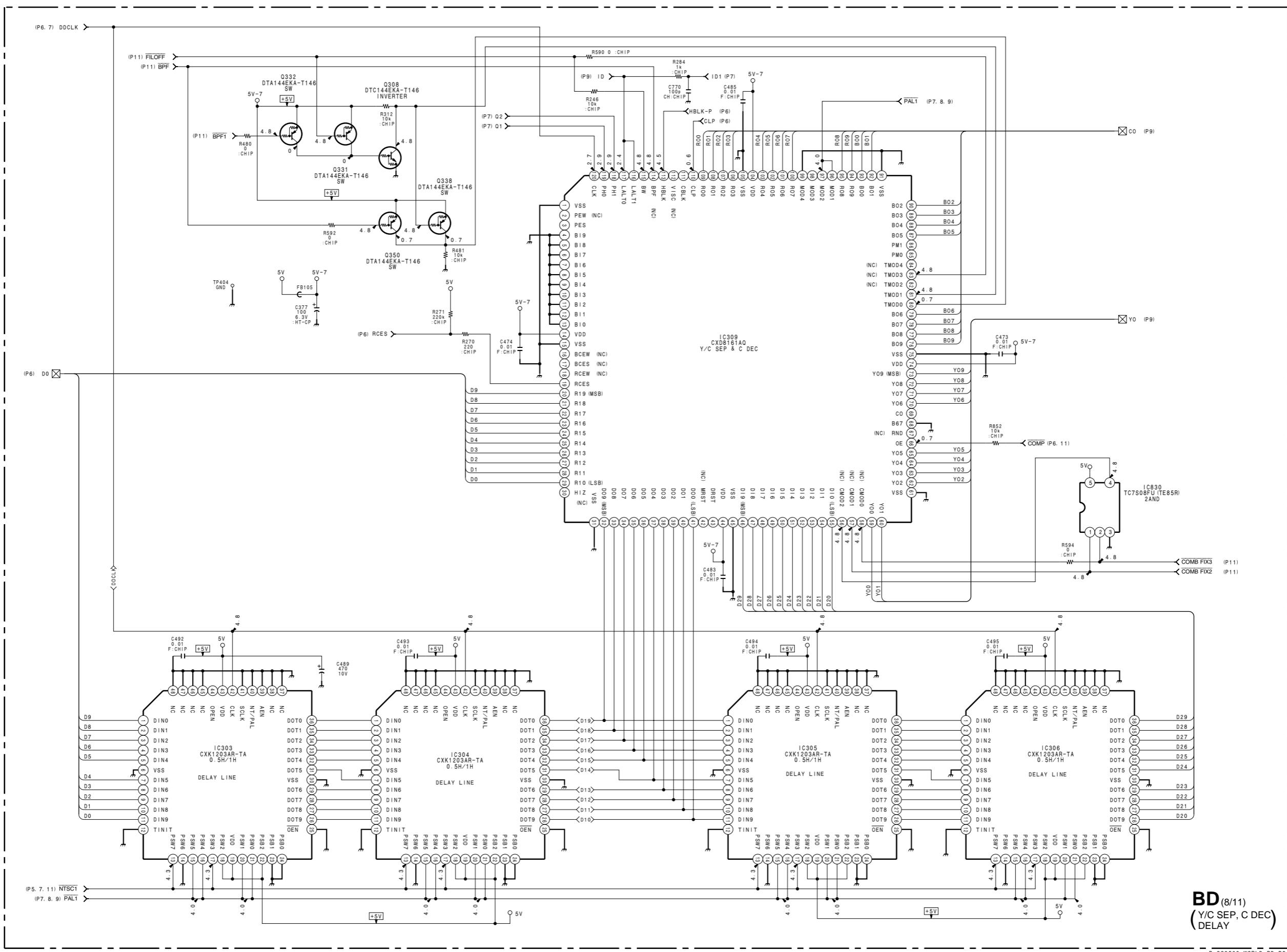


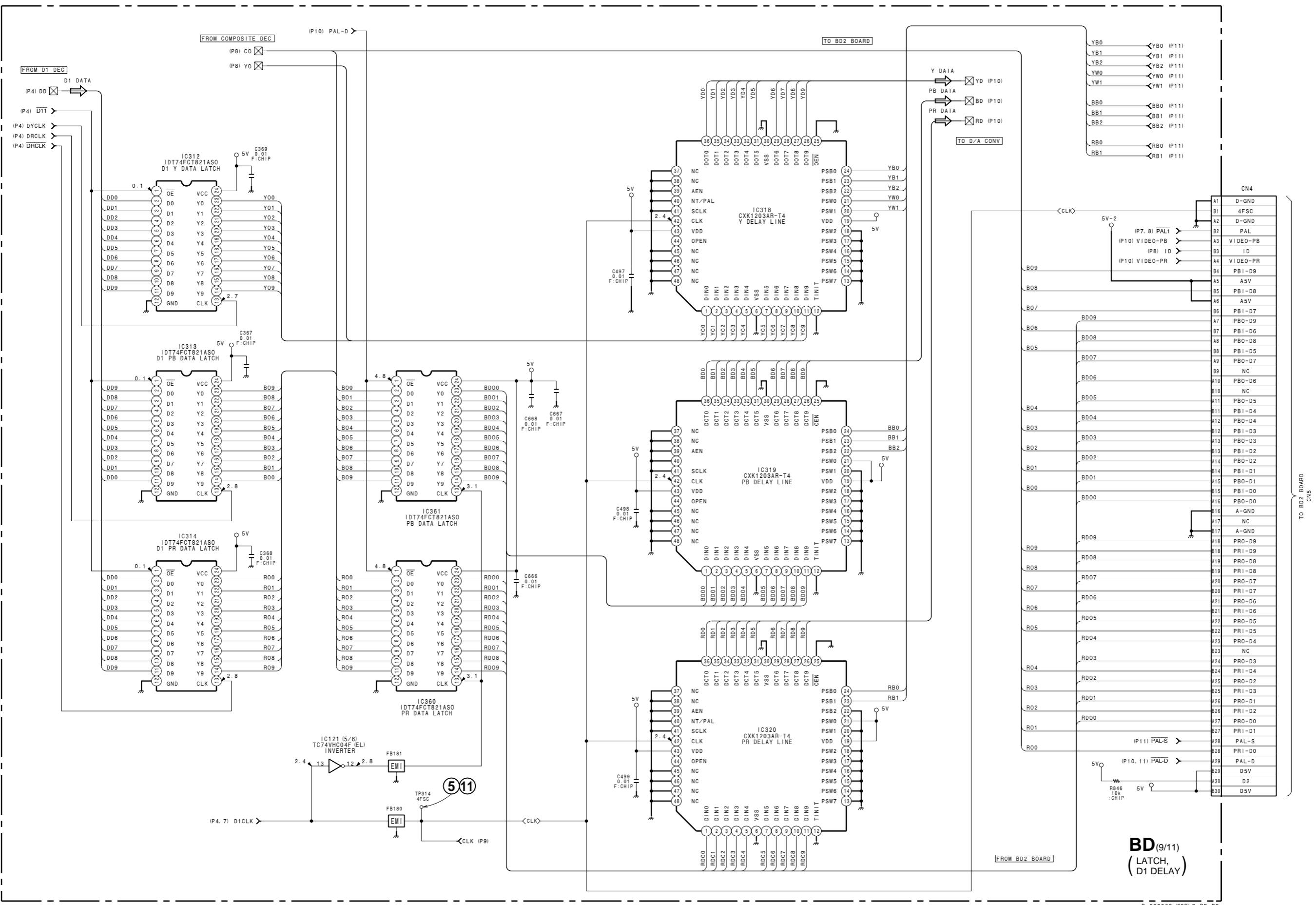


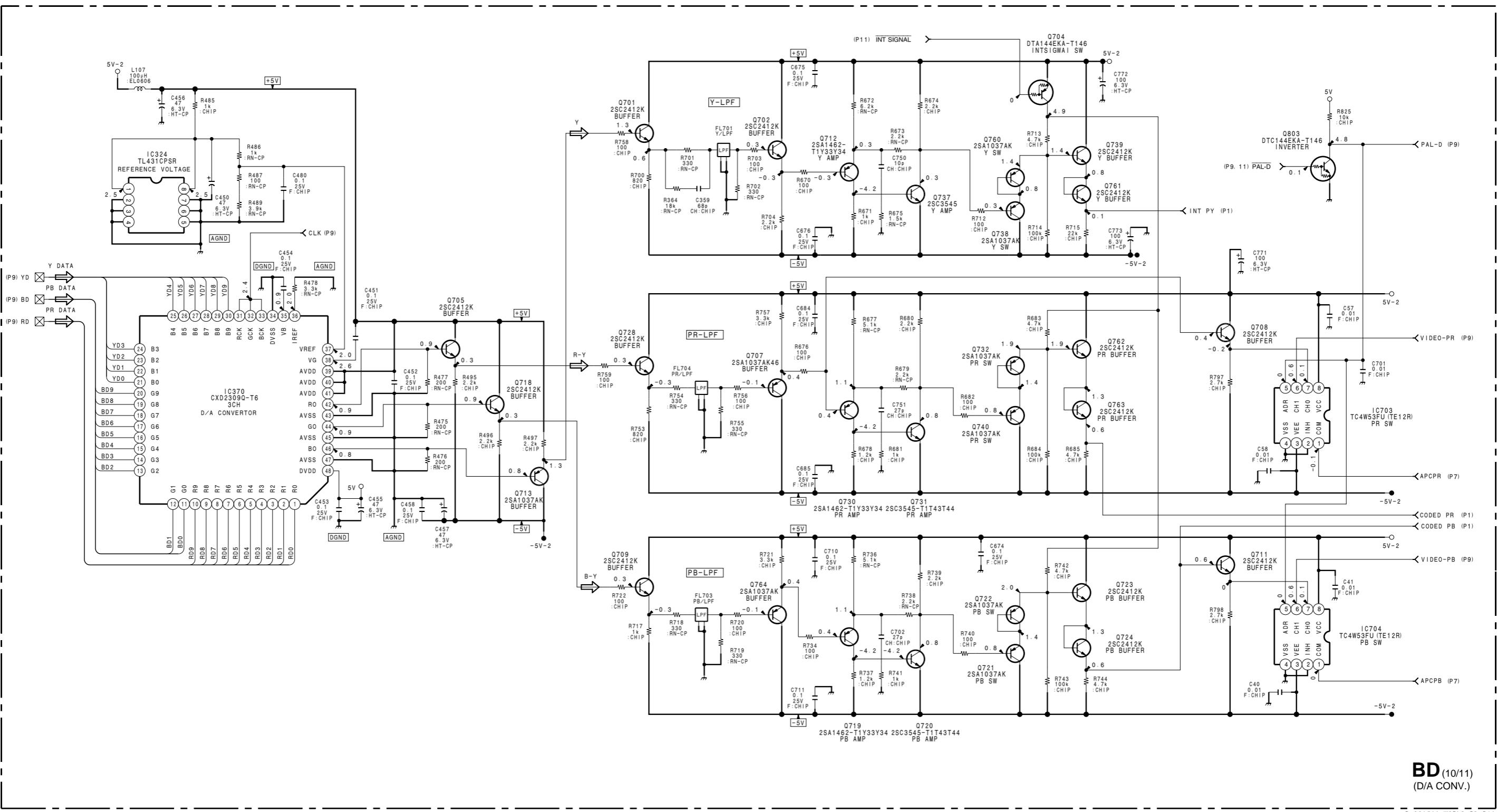


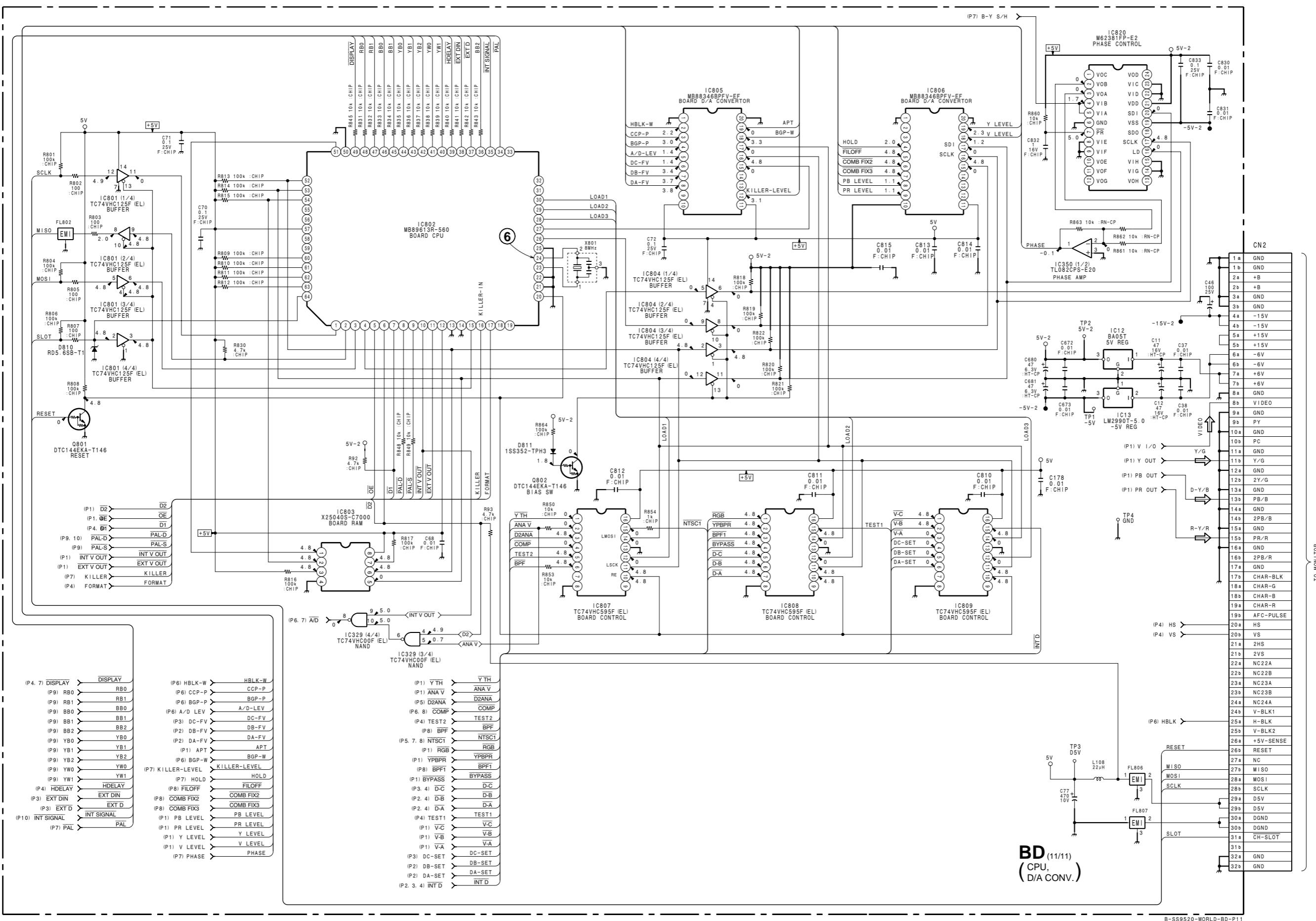


BD (8/11) BD (8/11)

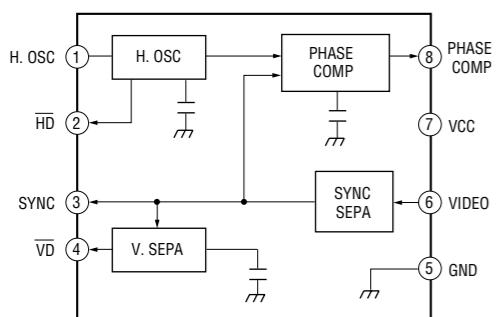




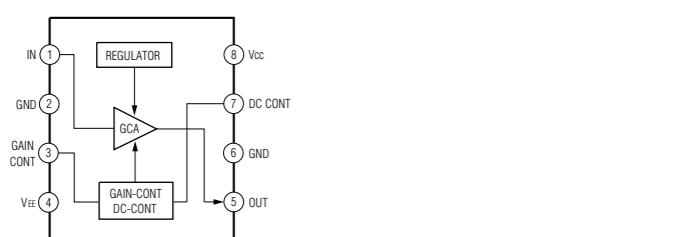




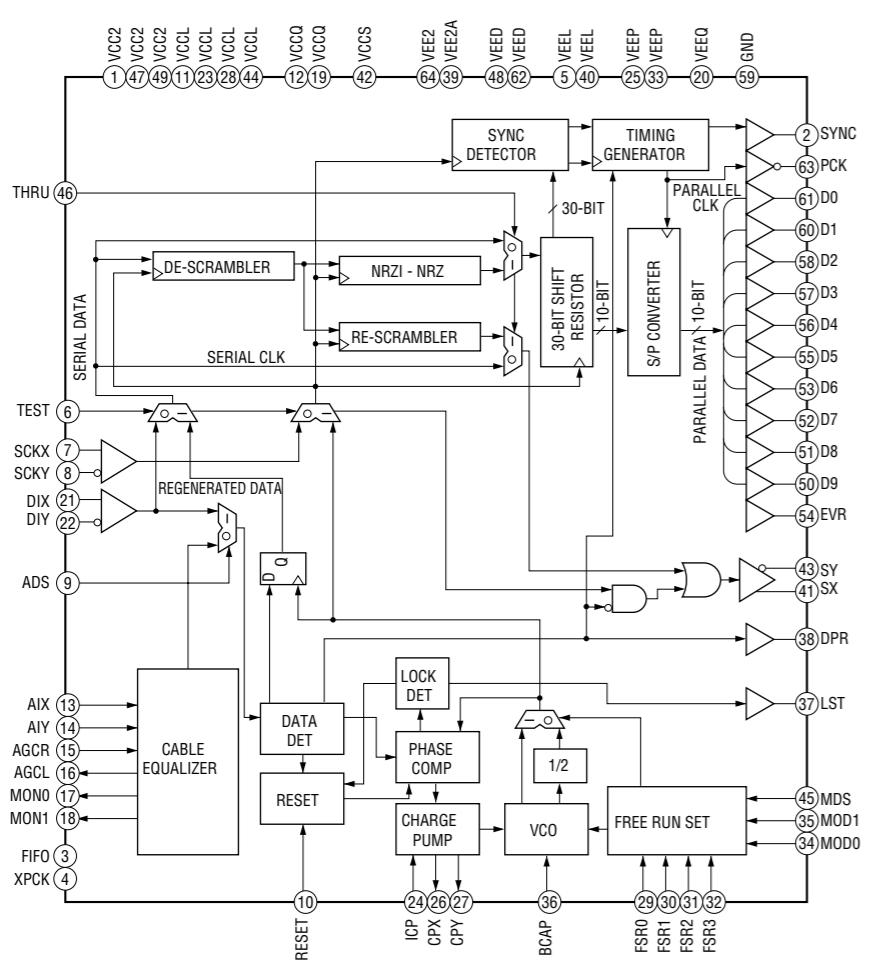
BA7046F-T1 (IC308)



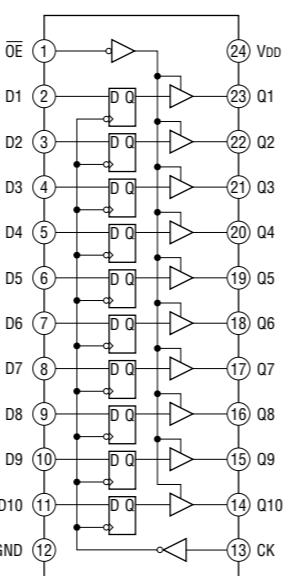
CXA1521M-T4 (IC300, IC401, IC501, IC502, IC601, IC602)



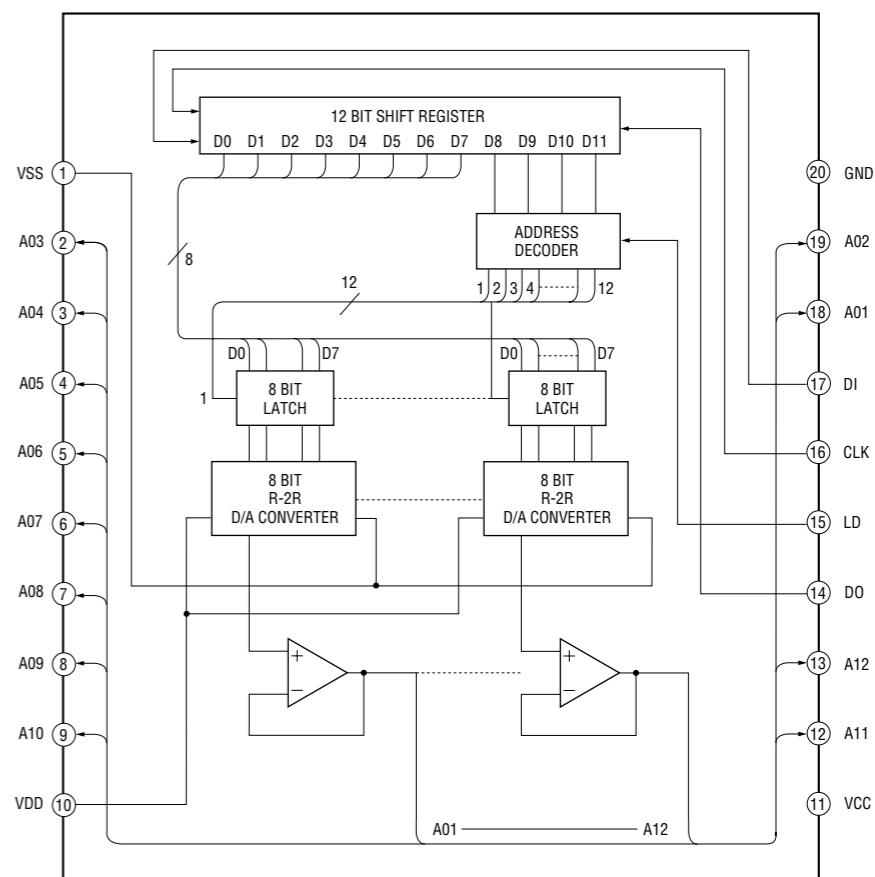
CXB1342R (IC101, IC104, IC106)



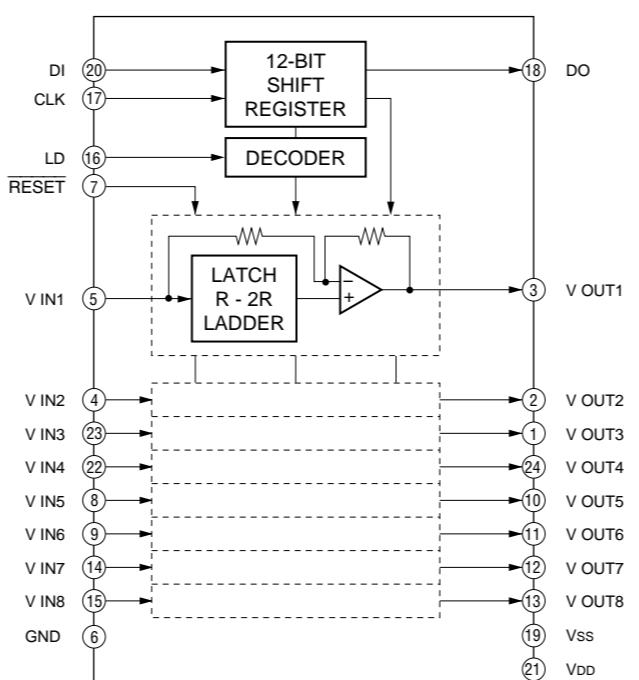
IDT74FCT821ASO
(IC312, IC313, IC314, IC360, IC361)



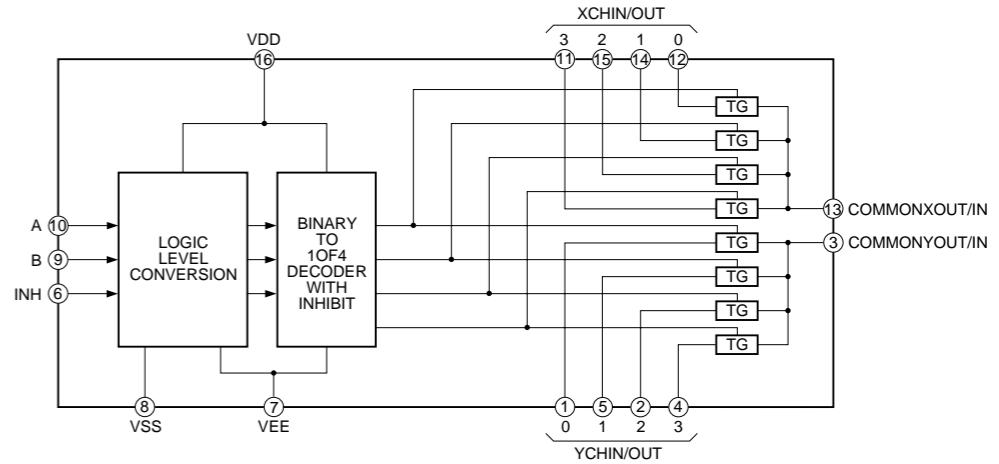
MB88346BPFV-EF (IC805, IC806)



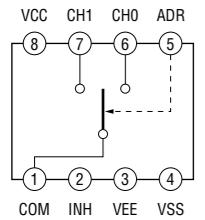
M62381FP-E2 (IC820)



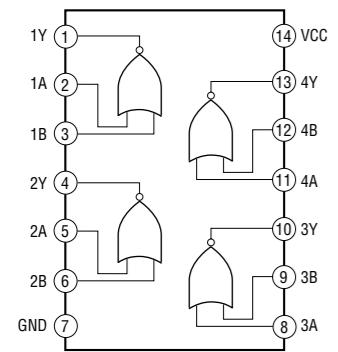
MC74HC4052AFEL (IC113, IC135)



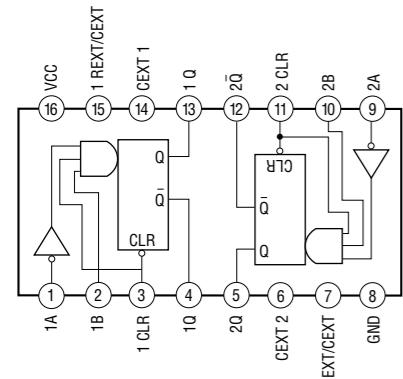
TC4W53FU (TE12R)
(IC337, IC351, IC352, IC371, IC703, IC704)



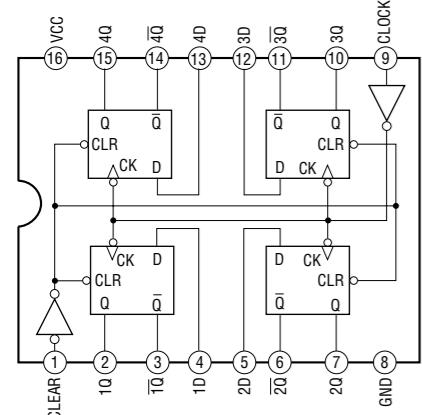
TC74VHC02F (EL) (IC117)



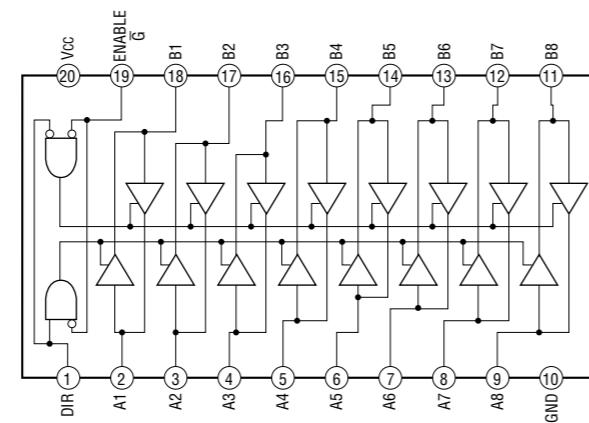
TC74VHC123AF (EL) (IC50)



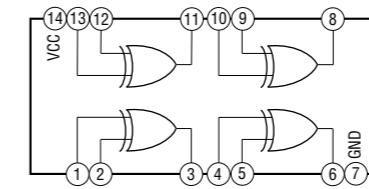
TC74VHC175F (EL) (IC119)



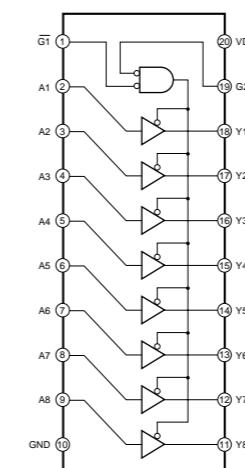
TC74VHC245F (EL), (IC125, IC126)



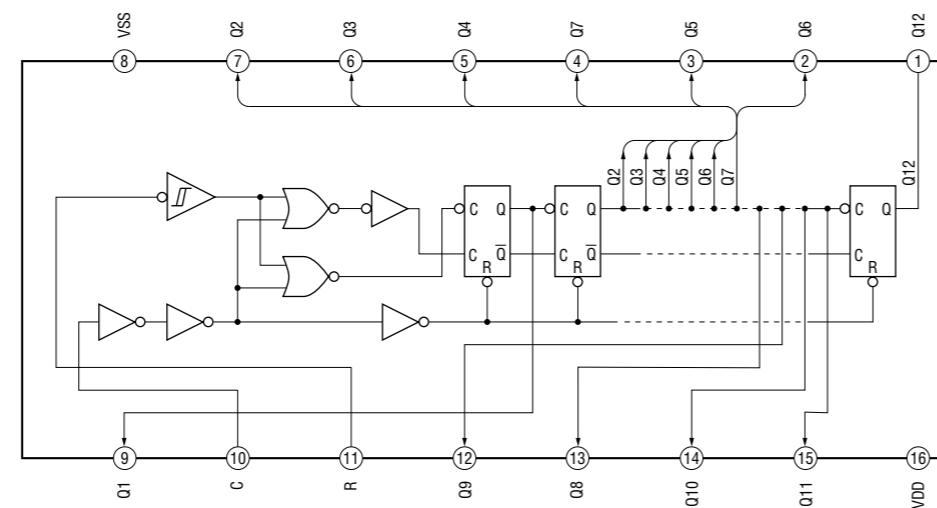
TC74VHC86F (EL) (IC118)



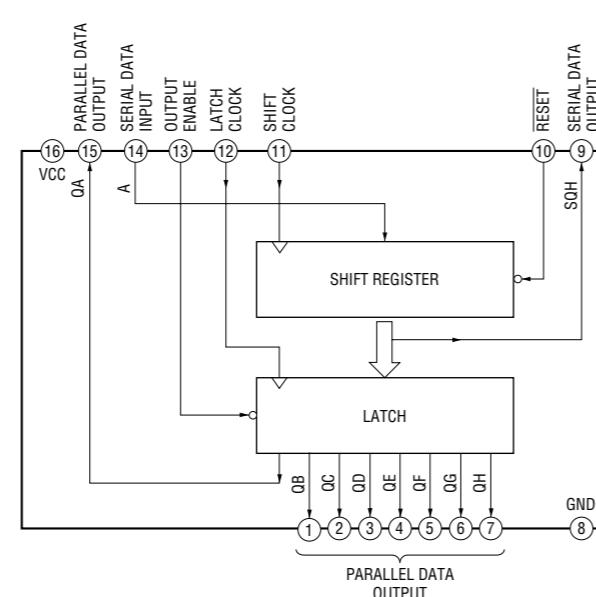
TC74VHCT541AFT (IC95, IC96, IC97, IC98, IC99, IC100)



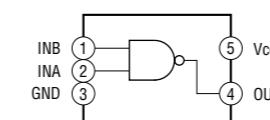
TC74VHC4040F (EL) (IC343)



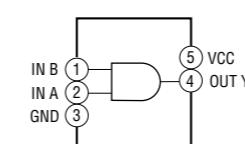
TC74VHC595F (EL) (IC807, IC808, IC809)



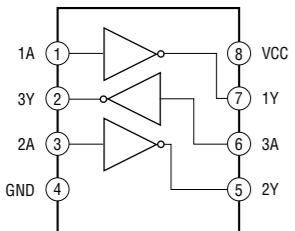
TC7S00FU (TE85R) (IC375)



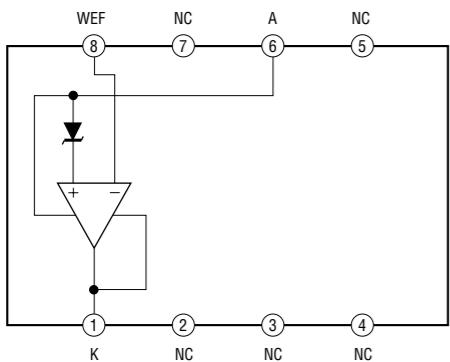
TC7S08FU (TE85R) (IC830)



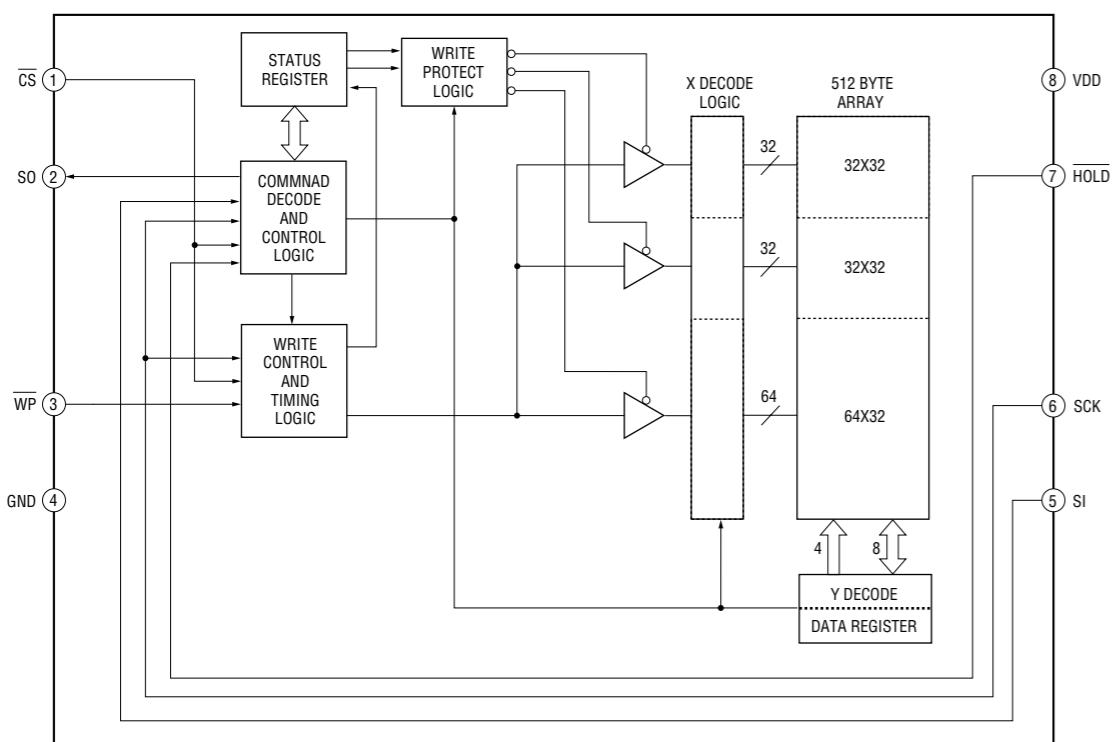
TC7WU04FU (TE12R) (IC338)



TL431CPSR (IC307, IC324)



X25040S-7000 (IC803)



BD Board Waveforms

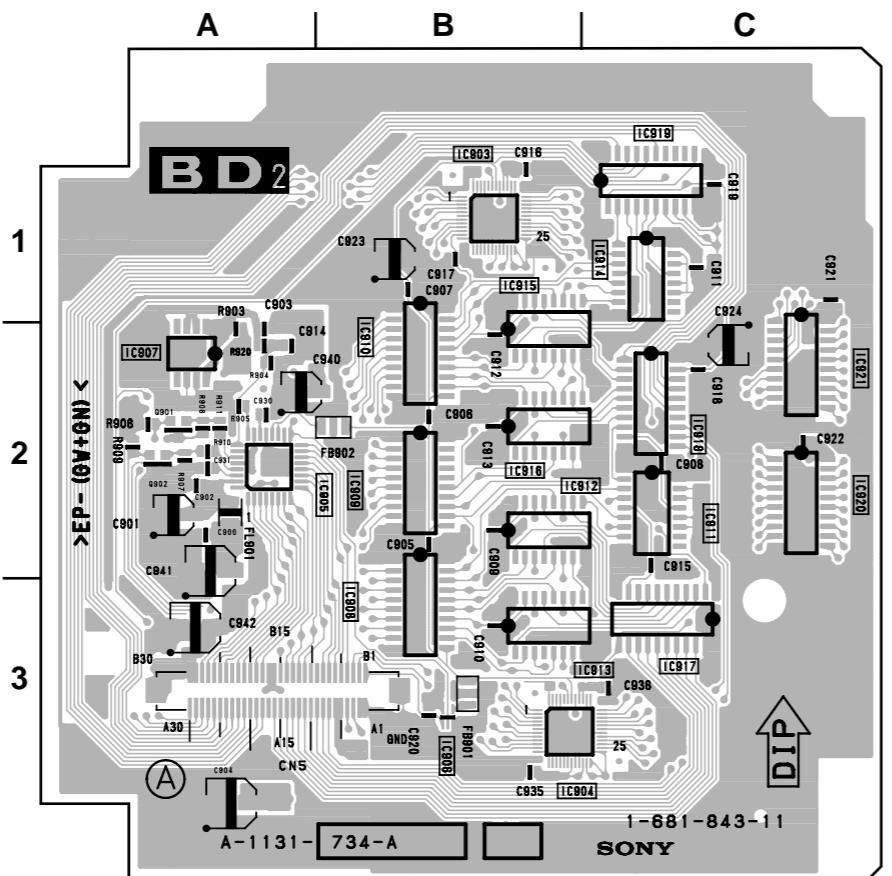
① TP201 (Y-OUT) Signal : D1  660 mVp-p (H)	② TP501 (PB-OUT) Signal : D1  640 mVp-p (H)	③ TP601 (PR-OUT) Signal : D1  640 mVp-p (H)
④ TP305 (PCLK) Signal : D1, D2  6.3 Vp-p D1 : 27 MHz D2 NTSC : 14.3 MHz D2 PAL : 17.7 MHz	⑤ TP314 (4FSC) Signal : D1, D2, Analog  6.8 Vp-p NTSC : 14.3 MHz PAL : 17.7 MHz	⑥ IC802- ②4 Signal : D1  4.3 Vp-p (8 MHz)
⑦ TP201 (Y-OUT) Signal : D2, Analog  1 Vp-p (H)	⑧ TP501 (PB-OUT) Signal : D2, Analog  700 mVp-p (H)	⑨ TP601 (PR-OUT) Signal : D2, Analog  700 mVp-p (H)
⑩ TP310 (CL-VIDEO) Signal : D2, Analog  1.7 Vp-p (H)	⑪ TP314 (4FSC) Signal : D2, Analog  5 Vp-p NTSC : 14.3 MHz PAL : 17.7 MHz	⑫ TP311 (BGP) Signal : D2, Analog  5 Vp-p (H)
⑬ TP313 (HBLK) Signal : D2, Analog  5 Vp-p (H)	⑭ TP713 (AFC) Signal : D2, Analog  5 Vp-p (H)	⑮ TP714 (COMP) Signal : D2, Analog  4.6 Vp-p (H)
⑯ TP715 (V) Signal : D2, Analog  5 Vp-p (V)	⑰ TP312 (CCP) Signal : D1, D2, Analog  5 Vp-p	

BD2 BOARD

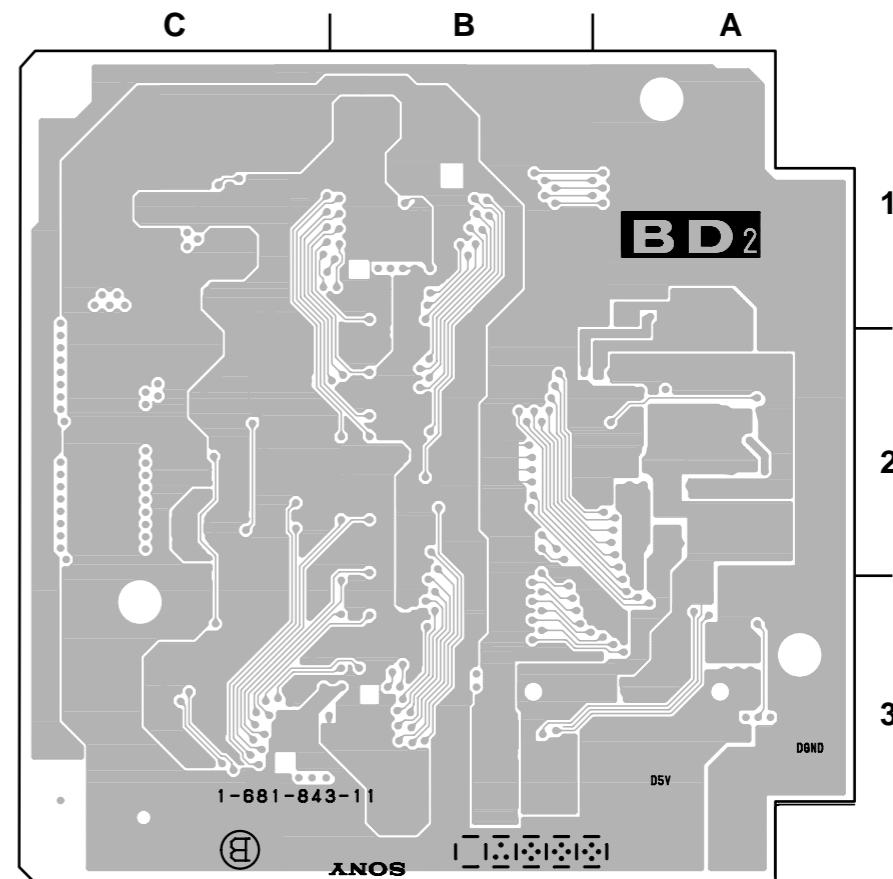
*: B SIDE

IC903 B-1
 IC904 B-3
 IC905 A-2
 IC906 B-3
 IC907 A-2
 IC908 B-3
 IC909 B-2
 IC910 B-2
 IC911 C-2
 IC912 B-2
 IC913 B-3
 IC914 C-1
 IC915 B-2
 IC916 B-2
 IC917 C-3
 IC918 C-2
 IC919 C-1
 IC920 C-2
 IC921 C-2

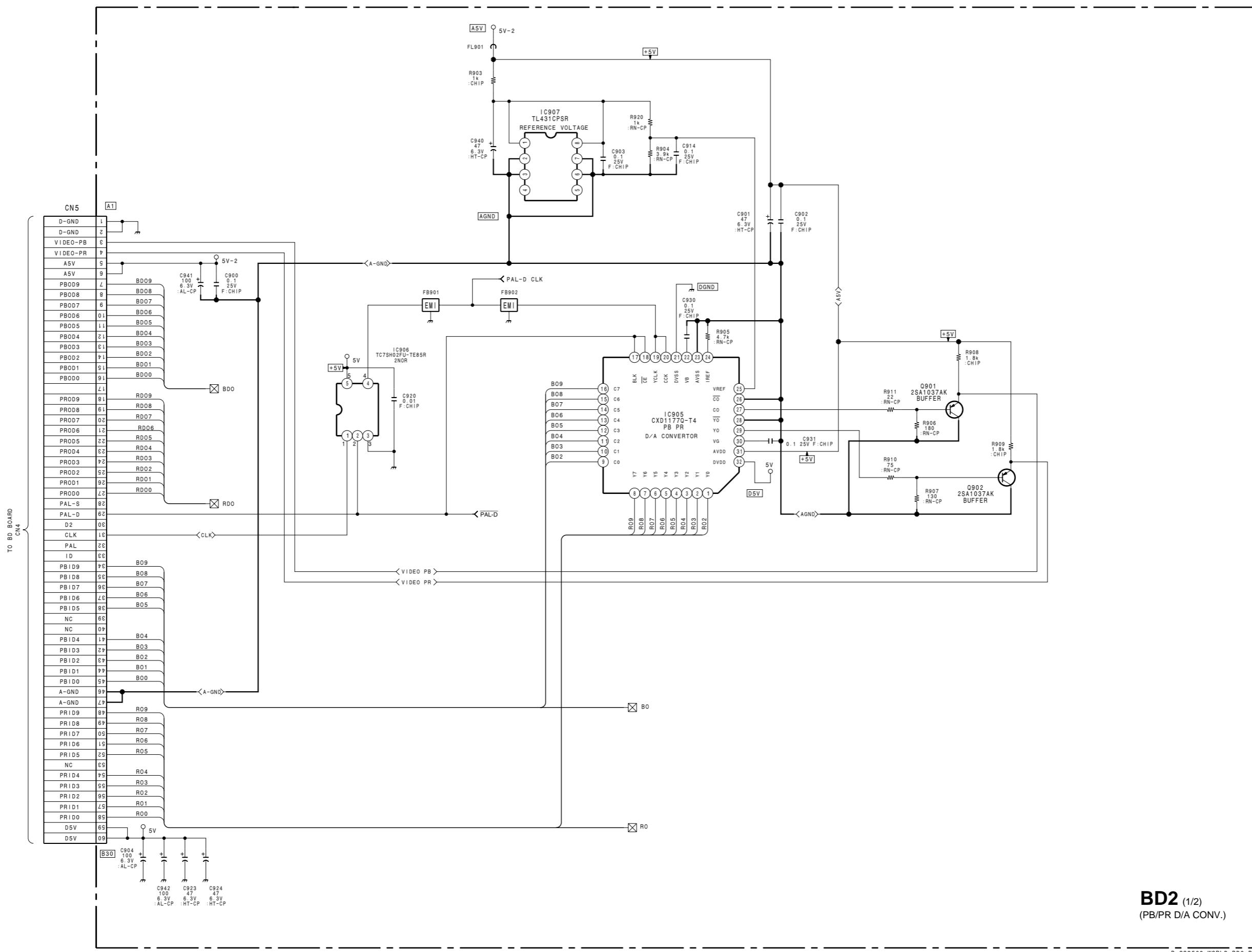
Q901 A-2
 Q902 A-2

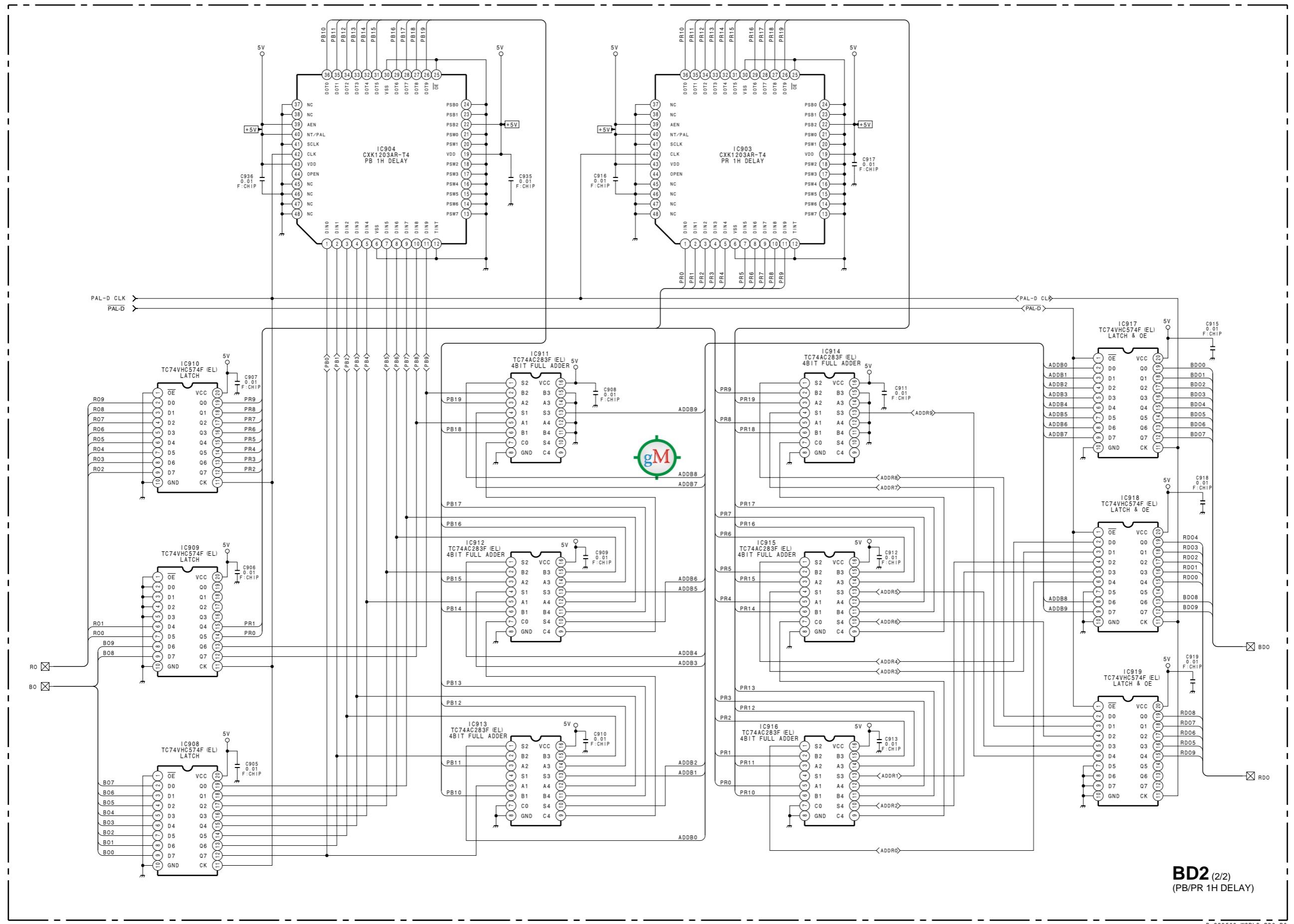


BD2 -A SIDE-
SUFFIX: -11

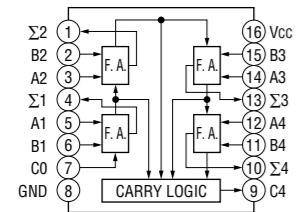


BD2 -B SIDE-
SUFFIX: -11

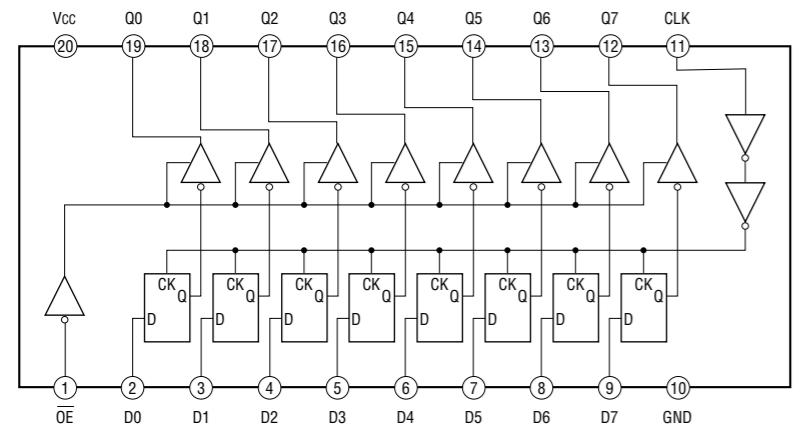




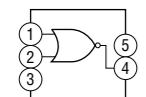
TC74AC283F (EL)
(IC911, IC912, IC913, IC914, IC915, IC916)



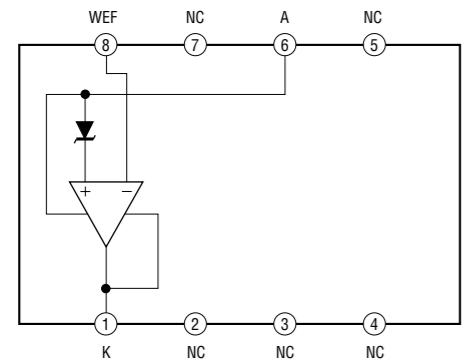
TC74VHC574F (EL)
(IC908, IC909, IC910, IC917, IC918, IC919)



TC7SH02FU-TE85R (IC906)



TL431CPSR (IC907)



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